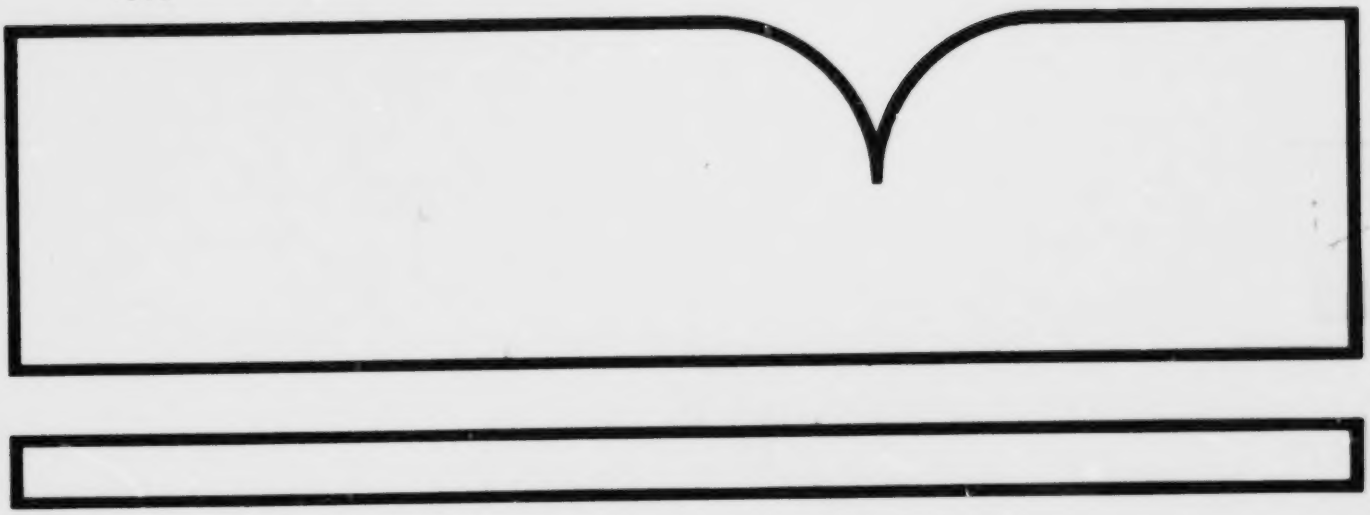
PB80-198450

Research, Demonstration, Training, and Fellowship Awards: April - September Fiscal Year 1978

(U.S.) Environmental Protection Agency
Washington, DC

1979



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BIBLIOGRAPHIC INFORMATION

PB80-198450

Research, Demonstration, Training, and Fellowship Awards: April - September, Fiscal Year 1978.

1979

PERFORMER: Environmental Protection Agency, Washington, DC. Grants Administration Div.

See also report for October 1977-March 1978, PB-289 857.

Section I lists research, documentation, training, and fellowship awards by State, program, and grantee name. Each record provides applicant name, municipality, program element, title, project director, grant identification number, type of grant award, date and dollar amount of award. Section II contains brief project descriptions for research and demonstration projects administered by Headquarters and is arranged in ascending order by the grant identification number. An index is provided for cross-referencing the information between Sections I and II.

KEYWORDS: *Air pollution, *Hazardous materials, *Solid waste disposal, *Water pollution, *Grants.

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PRICE CODE: PC A21/MF A01

United States
Environmental Protection
Agency

Grants Administration
Division (PM-216)
Washington DC 20460

April-September, FY 78

PB80-198450

EPA

Research, Demonstration, Training, and Fellowship Awards

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SOURCES OF INFORMATION ON EPA GRANTS AWARDED, REPORTS GENERATED BY GRANTS AND OTHER GRANT RELATED MATERIALS

Research, Demonstration, Training, and Fellowship Awards

Section I lists research, demonstration, training, and fellowship awards by State, program, and grantee name. Each record provides applicant name, municipality, program element, title, project director, grant identification number, type of grant award, date and dollar amount of award. Section II contains brief project descriptions for research and demonstration projects administered by Headquarters and is arranged in ascending order by the grant identification number. An index is provided for cross-referencing the information between Sections I and II.

1st Half of FY 1977 (October 1976 - March 1977)
EPA-GAD/ 1-78-01, NTIS Number PB278942, price $7.25

2nd Half of FY 1977 (April 1977 - September 1977)
EPA-GAD/ 1-78-02, NTIS Number PB283959, price $21.50

1st Half of FY 1978 (October 1977 - March 1978)
EPA-GAD/ 1-78-03, NTIS Number PB289857, price $9.00

State and Local Grant Awards

Lists all State and Local Assistance Awards by State, by program, and by grantee name. Format the same as for Research, Demonstration, Training, and Fellowship Awards listed above.

1st Half of FY 1977 (October 1976 - March 1977)
EPA-GAD/ 2-78-01, NTIS Number PB279888 price $11.75

2nd Half of FY 1977 (April 1977 - September 1977)
EPA-GAD/ 2-78-02, NTIS Number PB282687, price $15.25

1st Half of FY 1978 (October 1977 - March 1978)
EPA-GAD/ 2-78-03, NTIS Number and price to be assigned.

Awards Register, Grants Assistance Programs of EPA

Volume I. Section I lists research, demonstration, training and fellowship awards by State, program, and grantee name. Each record provides applicant name, municipality, program element, title, project director, Grant Identification Number, type of grant award, date and dollar amount of award. Section II contains brief project descriptions for research and demonstration projects administered by Headquarters and is arranged in ascending order by the Grant Identification Number. An index is provided for cross-referencing the information between Sections I and II. Section III is a cross-walk for use in identifying the program/subprogram area of a grant in accordance with classifications of our Office of Research and Development.

1st Half of FY 1976 (July 1975 - December 1975)
EPA-GAD/1-76-001, NTIS Number PB252893, price $5.25

2nd Half of FY 1976 (January 1976 - June 1976)
EPA-GAD/1-76-003, NTIS Number PB260742, price $9.00

Transition Quarter of FY 1976 (July 1976 - September 1976)
EPA-GAD/1-76-005, NTIS Number PB275407/AS, price $8.00

1st Half of FY 1975 (July 1974 - December 1974)
EPA-GAD/1-75-001, NTIS Number PB241476, price $5.25,
Microfiche, $3.00

2nd Half of FY 1975 (January 1975 - June 1975)
EPA-GAD/1-75-003, NTIS Number PB245575, price $10.75,
Microfiche $3.00

Volume II. Lists all State and Local Assistance Awards by State, by program, and by grantee name. Contents and format the same as for Volume I, Section I.

1st Half of FY 1976 (July 1975 - December 1975)
EPA-GAD/1-76-002, NTIS Number PB253091, price $11.00

2nd Half of FY 1976 (January 1976 - June 1976)
EPA-GAD/1-76-004, NTIS Number PB261980, price $11.00

Transition Quarter of FY 1976 (July 1976 - September 1976)
EPA-GAD/1-76-006, NTIS Number PB275408/AS, Price $9.00

Awards Register; Volume II, Continued

1st Half of FY 1975 (July 1974 - December 1974)
EPA-GAD/1-75-002, NTIS Number PB241400, price $9.00,
Microfiche, $3.00.

2nd Half of FY 1975 (January 1975 - June 1975)
EPA-GAD/1-75-004, NTIS Number PB245576, price $11.75,
Microfiche, $3.00.

Awards Register, Grants Assistance Programs of EPA
Fiscal Year 1974 (July 1973 - June 1974)

Volume I. Lists all awards in Fiscal Year 1974 except Waste Water Treatment Construction and Waste Water Treatment Reimbursement Awards. NTIS N-mber PB238370, price $8.00, microfiche, $3.00.

Volume II. Lists only Waste Water Treatment Construction Awards in Fiscal Year 1974. NTIS Number PB238371, price $9.25, microfiche, $3.00.

Volume III. Lists only Waste Water Treatment Reimbursement Awards in Fiscal Year 1974. NTIS Number PB238372, price $9.00, microfiche, $3.00.

Awards Register, Grants Assistance Programs of EPA
Fiscal Year 1973 (July 1972 - June 1973)

The format of this publication has the initial sort by State. Each entry includes grantee identification, program area, grant title, grant number, award date, and dollar amount. Environmental Protection Agency 220/1-73-004, NTIS Number PB229827, price $15.25, microfiche $3.00.

The above publications can be purchased from:

National Technical Information Service (NTIS)
Department of Commerce
5285 Port Royal Road
Springfield, Virginia 22161
(703) 557-4650

Awards Register, Grants Assistance Programs of EPA
Fiscal Year 1972 (July 1971 - June 1972)

This publication is currently out of print. It is available for reference at all EPA libraries and at EPA Headquarters, Grants Administration Division, 401 M Street SW, Washington, D.C.

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FEDERAL ASSISTANCE PROGRAMS OF THE ENVIRONMENTAL PROTECTION AGENCY

This publication includes descriptive information about Environmental Protection Agency assistance programs reprinted from the Catalog of Federal Domestic Assistance, which was prepared for the Office of Management and Budget. Similar information on programs of all Federal agencies is included in the Catalog which is available from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20420 for $18.00 and includes changes as issued. It is also available for public use in Federal Depository Libraries.

NOTE: All of the preceeding publications are available for examination at the Grants Administration Division and Library of EPA Headquarters and each Regional office.

OTHER GRANT-RELATED INFORMATION

A brief summary of a grant project is available on the majority of research and demonstration grants.

These summaries are available for projects that have received Federal funding. In rare instances, a grant application may contain privileged information and is so designated. For these, only the award data, such as grant number, applicant name, organization, location, grant title, amount awarded, and award date is available. Other information may be available depending on the particular circumstances.

The Smithsonian Science Information Exchange (SSIE), room 300, 1730 M Street, N.W., Washington, D.C. 20036, receives a copy of the summary of a grant and makes it available to the public on a fee basis. The cost of a print-out, if the Agency is identified and the grant or contract number is provided, costs $2.00 per grant number with a $10.00 minimum fee. A search on a subject (topic) is $60.00 per search service for 1 to 50 titles, and an additional charge of 25¢ per title. A search on the investigator's name can also be performed. All inquiries and requests for this service should be addressed to SSIE or phone (202) 381-4211.

REPORTS GENERATED BY GRANT SUPPORTED PROJECTS

Final reports and other program reports generated by grant supported projects are published and made available if merited. Final report information is available from the following program offices:

For solid waste management and resource recovery:

Publication and Distribution Unit
Office of Solid Waste Management
Environmental Protection Agency
Cincinnati, Ohio 45268

For air pollution control:

Library MD-35
Environmental Protection Agency
Research Triangle Park, North Carolina 27711

For pesticide publications:

Information Section WH-569
Office of Pesticide Programs
Environmental Protection Agency
401 M Street SW
Washington, D.C. 20460

For other research and demonstration projects:

Technology Transfer Staff
Office of Research and Development
Environmental Protection Agency
Cincinnati, Ohio 45268

EPA REPORTS BIBLIOGRAPHY QUARTERLY SUPPLEMENT

(sponsored by Library Systems Branch)

The EPA Cumulative Bibliography 1970-1976 published in December 1976 (NTIS Number PB265920, price quite obtained from NTIS) contains a bibliographic citation with abstracts for reports generated by EPA and its predecessor agencies and entered into the NTIS collection through 1976. Access points to this information are by Report Title; Subject (keyword); Corporate or Personal Author; Contract Number; and Accession/Report Number.

Beginning in March 1977, quarterly update supplements will be published listing and indexing EPA technical reports and journal articles entered into the NTIS collection during the preceding quarter. An additional index titled "Sponsoring EPA Office" is included as well. The fourth quarterly issue will cumulate and become the annual index for the year.

To order documents or subscriptions, contact the National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22161. Do not order from the U.S. Environmental Protection Agency. If what you have ordered is in stock on hand, you should receive your order within two weeks after it arrives at NTIS. If what you have ordered must be reproduced from a microform, or if all the paper copies have been sold and reprints are in process, you should receive your order within four to six weeks. Infrequently, orders may be further delayed by a contractor's inability to deliver to NTIS. You will be notified if such a delay is expected.

The EPA Reports Bibliography Quarterly Supplement series is available on annual subscription from NTIS at a cost of $45.00 for North American Continent users (single copies, when available, are $12.50 each). For those outside the North American Continent, please write NTIS for prices.

The following EPA libraries maintain for reference purposes completed sets of EPA reports on microfiche.

Region I Library
Room 2211-B, JFK Federal Bldg.
Boston, Massachusetts 02203

National Marine Water Quality Lab
P. O. Box 277
West Kingston, Rhode Island 02892

Region II Library
26 Federal Plaza
New York, New York 10007

Region II Field Office Library
Edison, New Jersey 08817

Region III Library
Curtis Bldg., 6th & Walnut Streets
Philadelphia, Pennsylvania 19106

Headquarters Library, Room 2404 WSM
401 M Street, S.W.
Washington, D.C. 20460

Region IV Library
345 Courtland Street, N.E.
Atlanta, Georgia 30309

Library Services MD-35
Research Triangle Park
North Carolina 27711

Southeast Environmental Research Lab
College Station Road
Athens, Georgia 30601

Gulf Breeze Laboratory
Sabine Island, Bldg. 29
Gulf Breeze, Florida 32561

Region V Library
230 Dearborn Street, Rm. 1455-A
Chicago, Illinois 60604

Environmental Research Center Library
26 West St. Clair Street
Cincinnati, Ohio 45268

Environmental Research Lab-Duluth
6201 Congdon Boulevard
Duluth, Minnesota 55804

Region VI Library
First International Bldg.
1201 Elm Street
Dallas, Texas 75270

Robert S. Kerr Environmental Research Laboratory
P. O. Box 1198
Ada, Oklahoma 74820

Region VII Library
1735 Baltimore Avenue, Room 249
Kansas City, Missouri 64108

Region VIII Library, 8M-ASL
1860 Lincoln Street
Denver, Colorado 80225

National Field Investigation Center
Room A-1209, Bldg. 53
Box 25227, Denver Federal Center
Denver, Colorado 80225

Region IX Library
100 California Street
San Francisco, California 94111

National Environmental Research Center
P. O. Box 15027
Las Vegas, Nevada 89114

Region X Library
1200 Sixth Avenue
Seattle, Washington 98101

National Environmental Research Center
200 S.W. 35th Street
Corvallis, Oregon 97330

GRANT NUMBER	STATE	PROGRAM	APPLICANT
800188-033	LA	RESEARCH	LOUISIANA STATE UNIV. & A&M COLLEGE
800426-070	CO	RESEARCH	COLORADO STATE UNIV.
800517-030	FL	RESEARCH	FLORIDA, UNIV. OF
800665-132	WA	RESEARCH	WASHINGTON, UNIV. OF
801001-025	MA	RESEARCH	WOODS HOLE OCEANOGRAPHIC INST.
802286-033	OR	RESEARCH	OREGON STATE UNIV.
802309-018	MN	DEMONSTRATION	ELY, CITY OF
802511-034	PA	RESEARCH	DREXEL UNIV.
802890-023	DE	RESEARCH	DELAWARE STATE COLLEGE
802914-035	MN	RESEARCH	MINNESOTA, UNIV. OF
803157-017	IL	RESEARCH	AMERICAN PUBLIC WORKS ASSOC.
803291-050	MI	RESEARCH	MICHIGAN, UNIV. OF
803399-034	MI	RESEARCH	MICHIGAN, UNIV. OF
803510-033	FC	RESEARCH	HEBREW UNIV.
803561-031	DC	RESEARCH	HOWARD UNIV.
803566-033	MT	RESEARCH	NORTHERN CHEYENNE TRIBAL COUNCIL
803593-032	PA	RESEARCH	AMERICAN SOCIETY FOR TESTING&MATERIALS
803602-040	MN	DEMONSTRATION	MINNEAPOLIS METRO WASTE CNTRL.
803627-014	CT	DEMONSTRATION	ENFIELD, TOWN OF
803627-015	CT	DEMONSTRATION	ENFIELD, TOWN OF
803631-024	MA	RESEARCH	HARVARD UNIV.
803634-030	NY	RESEARCH	CORNELL UNIV.
803637-022	MD	RESEARCH	CHARLES CNTY. COMMUN. COLLEGE
803652-024	IL	RESEARCH	ILLINOIS, UNIV. OF
803660-032	TX	RESEARCH	TEXAS, UNIV. OF
803684-030	CO	RESEARCH	COLORADO STATE UNIV.

GRANT NUMBER	STATE	PROGRAM	APPLICANT
803703-014	OK	RESEARCH	OKLAHOMA STATE DEPT. OF HEALTH
803764-031	NC	RESEARCH	ST. AUGUSTINE'S COLLEGE
803765-030	VA	RESEARCH	NORFOLK STATE COLLEGE
803769-017	WV	DEMONSTRATION	SOUTH CHARLESTON CITY SAN. BD.
803814-031	TX	RESEARCH	TEXAS, UNIV. OF
803844-031	TX	RESEARCH	TEXAS, UNIV. OF
803851-033	MN	RESEARCH	MINNESOTA, UNIV. OF
803882-023	PA	RESEARCH	PENNSYLVANIA STATE UNIV.
803887-030	FL	RESEARCH	FLORIDA STATE UNIV.
803896-023	MO	RESEARCH	WASHINGTON UNIV.
803902-031	RI	RESEARCH	RHODE ISLAND, UNIV. OF
803902-033	RI	RESEARCH	RHODE ISLAND, UNIV. OF
803902-034	RI	RESEARCH	RHODE ISLAND, UNIV. OF
803911-016	WA	DEMONSTRATION	SKOKOMISH INDIAN TRIBE
803922-032	AK	RESEARCH	ALASKA, UNIV. OF
803931-022	CO	RESEARCH	BOULDER, CITY OF
803945-032	AK	RESEARCH	ALASKA, UNIV. OF
803950-032	CO	RESEARCH	COLORADO STATE UNIV.
803950-033	CO	RESEARCH	COLORADO STATE UNIV.
803952-034	MN	RESEARCH	MINNESOTA, UNIV. OF
803953-023	GA	RESEARCH	GEORGIA INST. OF TECH.
803971-033	WI	RESEARCH	WISCONSIN, UNIV. OF
804033-033	WA	RESEARCH	WASHINGTON STATE UNIV.
804150-013	DC	RESEARCH	NATIONAL CENTER FOR RESOURCE RECOVERY
804162-015	CO	RESEARCH	COLORADO SCH. OF MINES RES. INST.
804168-030	OH	RESEARCH	CHILDREN'S HOSPITAL RES FDN

GRANT NUMBER	STATE	PROGRAM	APPLICANT
804190-022	TX	RESEARCH	TEXAS A&M RES. FDN.
804201-022	OH	RESEARCH	OHIO STATE UNIV.
804204-021	GA	RESEARCH	ATLANTA UNIV. CTR.
804218-031	NC	RESEARCH	NORTH CAROLINA, UNIV. OF
804222-011	WA	DEMONSTRATION	KITSAP CNTY.
804250-014	NY	DEMONSTRATION	NEW YORK STATE DEPT. OF ENVRN. CONSERV
804254-016	NY	DEMONSTRATION	NEW YORK STATE DEPT. OF ENVRN. CONSERV
804290-022	VA	RESEARCH	VIRGINIA MEDICAL COLLEGE
804309-013	DC	RESEARCH	ENVIRONMENTAL LAW INST.
804321-013	TN	RESEARCH	TENNESSEE, UNIV. OF
804329-016	NC	RESEARCH	AMERICAN TEXTILE MANUFACTURERS INST.
804333-021	OH	RESEARCH	OHIO UNIV.
804337-020	IL	RESEARCH	ILLINOIS, UNIV. OF
804366-023	CA	RESEARCH	CALIFORNIA, UNIV. OF
804367-019	DC	DEMONSTRATION	INSTITUTE OF INDUSTRIAL LAUNDERERS
804369-030	MI	RESEARCH	MICHIGAN, UNIV. OF
804375-024	FL	RESEARCH	FLORIDA STATE OFFICE OF HEALTH
804381-022	NC	RESEARCH	NORTH CAROLINA, UNIV. OF
804381-023	NC	RESEARCH	NORTH CAROLINA, UNIV. OF
804385-016	DC	RESEARCH	PUBLIC TECHNOLOGY, INC.
804395-030	MO	RESEARCH	WASHINGTON UNIV.
804395-031	MO	RESEARCH	WASHINGTON UNIV.
804427-023	OR	RESEARCH	OREGON STATE UNIV.
804429-030	AR	RESEARCH	ARKANSAS, UNIV. OF
804429-031	AR	RESEARCH	ARKANSAS, UNIV. OF
804430-030	NC	RESEARCH	NORTH CAROLINA, UNIV. OF

GRANT NUMBER	STATE	PROGRAM	APPLICANT
804431-030	CA	RESEARCH	STANFORD UNIV.
804431-031	CA	RESEARCH	STANFORD UNIV.
804433-012	CO	RESEARCH	AMERICAN WATER WORKS ASSOC. RES. FDN.
804455-013	NJ	RESEARCH	NEW JERSEY INST. OF TECH. FDN.
804458-021	FL	RESEARCH	WEST FLORIDA, UNIV. OF
804472-020	CO	RESEARCH	COLORADO, UNIV. OF
804474-020	TX	RESEARCH	TEXAS, UNIV. OF
804477-022	GA	RESEARCH	GEORGIA STATE UNIV.
804501-014	MN	RESEARCH	MINNESOTA, UNIV. OF
804504-013	NH	DEMONSTRATION	A. C. LAWRENCE LEATHER CO.
804510-013	GA	RESEARCH	GEORGIA, UNIV. OF
804511-030	PA	DEMONSTRATION	PENNSYLVANIA DEPT. OF ENVRN. RESOURCES
804512-030	MN	RESEARCH	MINNESOTA, UNIV. OF
804513-030	NY	RESEARCH	BOYCE THOMPSON INST.
804516-030	CA	RESEARCH	CALIFORNIA, UNIV. OF
804518-012	WI	RESEARCH	MILWAUKEE CNTY. METRO. SEWER DIST.
804533-023	IA	RESEARCH	IOWA STATE UNIV.
804538-012	IL	RESEARCH	ILLINOIS INST. OF TECH.
804539-030	FC	RESEARCH	YUGOSLAV ACADEMY OF SCI & ARTS
804541-020	FL	RESEARCH	WEST FLORIDA, UNIV. OF
804546-030	CA	RESEARCH	CALIFORNIA, UNIV. OF
804547-030	IN	RESEARCH	PURDUE RES. FDN.
804563-030	NY	RESEARCH	MANHATTAN COLLEGE
804568-022	KY	RESEARCH	KENTUCKY, UNIV. OF
804570-030	FL	RESEARCH	FLORIDA, UNIV. OF
804571-016	LA	RESEARCH	JEFFERSON PARISH

GRANT NUMBER	STATE	PROGRAM	APPLICANT
804572-013	NY	RESEARCH	UNION COLLEGE
804573-021	NY	RESEARCH	NEW YORK STATE UNIV.
804577-030	NC	RESEARCH	NORTH CAROLINA, UNIV. OF
804595-021	MT	RESEARCH	MONTANA TECH, ALUMNI, FDN.
804595-022	MT	RESEARCH	MONTANA TECH, ALUMNI, FDN.
804600-022	MN	RESEARCH	MINNESOTA, UNIV. OF
804608-021	NC	RESEARCH	NORTH CAROLINA STATE UNIV.
804611-022	FL	RESEARCH	MIAMI, UNIV. OF
804611-030	FL	RESEARCH	MIAMI, UNIV. OF
804612-021	OH	RESEARCH	OHIO STATE UNIV.
804612-030	OH	RESEARCH	OHIO STATE UNIV. RES. FDN.
804613-030	OK	RESEARCH	OKLAHOMA STATE UNIV.
804614-020	WI	RESEARCH	WISCONSIN, UNIV. OF
804621-021	TX	RESEARCH	TEXAS, UNIV. OF
804628-011	MA	RESEARCH	LOWELL, UNIV. OF
804631-030	OH	RESEARCH	OHIO AGR. RES & DEV. CTR.
804635-030	NC	RESEARCH	NORTH CAROLINA, UNIV. OF
804640-030	TX	RESEARCH	NORTH TEXAS STATE UNIV.
804647-021	LA	RESEARCH	NEW ORLEANS, UNIV. OF
804647-022	LA	RESEARCH	NEW ORLEANS, UNIV. OF
804650-030	NC	RESEARCH	NORTH CAROLINA, UNIV. OF
804655-013	CT	RESEARCH	SEABOARD METAL FINISHING CO., INC.
804658-013	NY	RESEARCH	NEW YORK UNIV.
804679-030	AZ	RESEARCH	ARIZONA, UNIV. OF
804686-021	MI	RESEARCH	MICHIGAN, UNIV. OF
804689-030	NY	RESEARCH	NEW YORK STATE DEPT. OF HEALTH

GRANT NUMBER	STATE	PROGRAM	APPLICANT
804692-013	CA	RESEARCH	CALIFORNIA STATE DEPT. OF HEALTH
804692-014	CA	RESEARCH	CALIFORNIA STATE DEPT. OF HEALTH
804693-014	CT	DEMONSTRATION	HAFNER INDUSTRIES, INC.
804760-030	MA	RESEARCH	HARVARD COLLEGE
804710-016	NJ	RESEARCH	NEW JERSEY INST. OF TECH. FDN.
804716-015	SC	RESEARCH	SOUTH CAROLINA, UNIV. OF
804717-030	SC	RESEARCH	CLEMSON UNIV.
804719-020	CO	RESEARCH	COLORADO STATE UNIV.
804729-014	WA	DEMONSTRATION	VANCOUVER, PORT OF
804733-020	OH	RESEARCH	CINCINNATI, UNIV. OF
804736-013	MN	RESEARCH	MINNESOTA, UNIV. OF
804743-020	NY	RESEARCH	NEW YORK STATE HLTH RES.
804749-012	FL	RESEARCH	MIAMI, UNIV. OF
804750-021	OR	RESEARCH	OREGON GRAD. CTR. FOR STUDY & RES.
804773-016	WI	RESEARCH	WISCONSIN, UNIV. OF
804775-012	MN	DEMONSTRATION	MINNESOTA, UNIV. OF
804778-030	NC	RESEARCH	NORTH CAROLINA STATE UNIV.
804780-021	FL	RESEARCH	MIAMI, UNIV. OF
804803-020	MD	RESEARCH	MARYLAND, UNIV. OF
804814-010	CA	DEMONSTRATION	SANTA BARBARA, CITY OF
804820-030	NY	RESEARCH	RENSSELAER POLYTECHNIC INST.
804847-023	OK	RESEARCH	OKLAHOMA STATE UNIV.
804853-020	CA	RESEARCH	CALIFORNIA, UNIV. OF
804864-013	VA	RESEARCH	VIRGINIA POLY. INST. & STATE UNIV.
804865-030	NJ	RESEARCH	RUTGERS UNIV.
804868-031	OH	RESEARCH	OHIO STATE UNIV.

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GRANT NUMBER	STATE	PROGRAM	APPLICANT
804900-012	NY	RESEARCH	CORNELL UNIV.
804900-013	NY	RESEARCH	CORNELL UNIV.
804917-030	NC	RESEARCH	NORTH CAROLINA, UNIV. OF
804917-031	NC	RESEARCH	NORTH CAROLINA, UNIV. OF
804921-030	CO	RESEARCH	COLORADO STATE UNIV.
804925-012	NY	RESEARCH	CORNELL UNIV.
804926-030	NJ	RESEARCH	TEXTILE RES. INST.
804932-030	CT	RESEARCH	SIAM INST. FOR MATH & SOCIETY
804937-020	NY	RESEARCH	CLARKSON COLLEGE OF TECH.
804943-030	DE	DEMONSTRATION	E.I. DUPONT DE NEMOURS & CO., INC.
804946-012	MA	RESEARCH	MARLBOROUGH, CITY OF
804947-012	VA	RESEARCH	VIRGINIA INST. OF MARINE SCI.
804948-011	NY	RESEARCH	NEW YORK STATE UNIV.
804953-031	MN	RESEARCH	MINNESOTA, UNIV. OF
804955-030	AL	RESEARCH	SOUTHERN RES. INST.
804959-022	NC	RESEARCH	NORTH CAROLINA, UNIV. OF
804963-012	OR	RESEARCH	OREGON STATE UNIV.
804971-012	CA	RESEARCH	HYDROCOMP, INC.
804972-022	KY	RESEARCH	INTERSTATE MINING COMPACT COMM.
804974-020	LA	RESEARCH	SOUTHERN UNIV.
804975-020	OK	RESEARCH	OKLAHOMA, UNIV. OF
804978-021	MA	RESEARCH	MASSACHUSETTS INST. OF TECH.
804978-030	MA	RESEARCH	MASSACHUSETTS INST. OF TECH.
804979-030	NC	RESEARCH	RESEARCH TRIANGLE INST.
804990-015	CA	RESEARCH	CALIFORNIA INST. OF TECH.
804996-030	MN	RESEARCH	MINNESOTA, UNIV. OF

GRANT NUMBER	STATE	PROGRAM	APPLICANT
805008-020	OH	RESEARCH	OHIO STATE UNIV.
805011-012	NC	RESEARCH	NORTH CAROLINA STATE UNIV.
805012-011	MT	RESEARCH	HELENA DEPT. HEALTH & ENVRN. SCIENCES
805014-030	VA	RESEARCH	VIRGINIA COMMONWEALTH UNIV.
805015-020	AL	RESEARCH	AUBURN UNIV.
805017-011	VA	RESEARCH	OLD DOMINION UNIV. RES. FDN.
805028-013	MA	DEMONSTRATION	BILLERICA, TOWN OF
805045-011	NV	RESEARCH	NEVADA, UNIV. OF
805046-012	MI	RESEARCH	MICHIGAN STATE UNIV.
805059-011	WY	RESEARCH	WYOMING, UNIV. OF
805095-012	OH	RESEARCH	BATTELLE MEMORIAL INST.
805097-012	CA	RESEARCH	CALIFORNIA, UNIV. OF
805099-010	OK	RESEARCH	TULSA, UNIV. OF
805101-020	SC	RESEARCH	SOUTH CAROLINA, UNIV. OF
805106-020	PA	RESEARCH	PHILADELPHIA ACADEMY NATURAL SCIENCES
805116-020	SC	RESEARCH	SOUTH CAROLINA, UNIV. OF
805133-011	MI	RESEARCH	MICHIGAN, UNIV. OF
805143-020	KY	RESEARCH	KENTUCKY, UNIV. OF
805150-020	FC	RESEARCH	TORONTO, UNIV. OF
805151-021	OK	RESEARCH	EAST CENTRAL OKLAHOMA STATE UNIV.
805172-011	MN	RESEARCH	MINNESOTA, UNIV. OF
805179-012	WA	DEMONSTRATION	PACIFIC WOOD TREATING CORP.
805182-012	SC	DEMONSTRATION	LA FRANCE INDUSTRIES
805183-020	CO	RESEARCH	COLORADO STATE UNIV.
805184-020	NC	RESEARCH	NORTH CAROLINA, UNIV. OF
805193-020	OH	RESEARCH	MIAMI UNIV.

GRANT NUMBER	STATE	PROGRAM	APPLICANT
805195-020	CT	RESEARCH	CONNECTICUT, UNIV. OF
805210-020	OR	RESEARCH	OREGON STATE UNIV.
805211-020	OH	RESEARCH	NATIONAL WATER WELL ASSOC.
805227-020	VA	RESEARCH	VIRGINIA, UNIV. OF
805239-020	NY	RESEARCH	NEW YORK UNIV.
805254-011	NY	RESEARCH	HUNTER COLLEGE OF CUNY
805270-020	MI	RESEARCH	MICHIGAN STATE UNIV.
805271-020	CO	RESEARCH	COLORADO STATE UNIV.
805291-012	MN	RESEARCH	MINNESOTA, UNIV. OF
805292-020	TX	RESEARCH	BAYLOR COLLEGE OF MEDICINE
805293-020	IL	RESEARCH	ILLINOIS, UNIV. OF
805297-020	MO	RESEARCH	MISSOURI, UNIV. OF
805298-020	PA	RESEARCH	PITTSBURGH, UNIV. OF
805301-020	FL	RESEARCH	MIAMI, UNIV. OF
805305-010	GA	RESEARCH	GEORGIA, UNIV. OF
805307-012	OK	RESEARCH	OKLAHOMA STATE UNIV.
805313-020	WA	RESEARCH	WASHINGTON, UNIV. OF
805319-020	UT	RESEARCH	UTAH STATE UNIV.
805325-011	IL	RESEARCH	DEPAUL UNIV.
805325-020	IL	RESEARCH	DEPAUL UNIV.
805327-011	NY	RESEARCH	NEW YORK STATE DEPT. OF ENVRN. CONSERV
805332-012	NC	RESEARCH	NORTH CAROLINA STATE UNIV.
805335-011	OH	RESEARCH	BATTELLE MEMORIAL INST.
805336-020	PA	RESEARCH	BITUMINOUS COAL RES. INC.
805337-011	OH	RESEARCH	OHIO STATE UNIV. RES. FDN.
805339-020	MI	RESEARCH	MICHIGAN, UNIV. OF

GRANT NUMBER	STATE	PROGRAM	APPLICANT
805340-010	LA	RESEARCH	GULF SOUTH RES. INST.
805341-011	LA	RESEARCH	TULANE UNIV.
805342-020	WA	RESEARCH	WASHINGTON STATE UNIV.
805343-020	WA	RESEARCH	WASHINGTON STATE UNIV.
805353-020	IL	RESEARCH	SOUTHERN ILLINOIS UNIV.
805355-020	CA	RESEARCH	CALIFORNIA, UNIV. OF
805357-020	TX	RESEARCH	TEXAS, UNIV. OF
805363-012	WA	RESEARCH	WASHINGTON, UNIV. OF
805364-011	NY	RESEARCH	ROCKEFELLER UNIV.
805366-020	FL	RESEARCH	WEST FLORIDA, UNIV. OF
805367-020	MT	RESEARCH	MONTANA STATE UNIV.
805368-011	PA	RESEARCH	PITTSBURGH, UNIV. OF
805370-020	OH	RESEARCH	WOOSTER, COLLEGE OF
805376-020	WA	RESEARCH	WASHINGTON STATE UNIV.
805379-013	CA	RESEARCH	CALIFORNIA, UNIV. OF
805391-020	MT	RESEARCH	MONTANA STATE UNIV.
805400-020	FL	RESEARCH	FLORIDA, UNIV. OF
805401-020	CO	RESEARCH	COLORADO STATE UNIV.
805407-020	OR	RESEARCH	OREGON STATE UNIV.
805409-020	WA	RESEARCH	WASHINGTON, UNIV. OF
805410-020	CA	RESEARCH	CALIFORNIA, UNIV. OF
805411-015	MD	RESEARCH	MARYLAND, UNIV. OF
805414-020	CA	RESEARCH	CALIFORNIA, UNIV. OF
805417-011	DC	RESEARCH	NINTH INTNATL CONGRESS OF PLANT PROT
805418-011	CA	RESEARCH	WOODWARD CLYDE CONSULTANTS
805419-020	OK	RESEARCH	OKLAHOMA STATE UNIV.

GRANT NUMBER	STATE	PROGRAM	APPLICANT
805420-020	MA	RESEARCH	WHEATON COLLEGE
805423-011	OR	RESEARCH	OREGON STATE UNIV.
805423-012	OR	RESEARCH	OREGON STATE UNIV.
805424-013	FL	RESEARCH	FLORIDA, UNIV. OF
805426-020	CA	RESEARCH	STANFORD UNIV.
805427-011	AZ	RESEARCH	ARIZONA, UNIV. OF
805429-020	MO	RESEARCH	MISSOURI, UNIV. OF
805431-020	IL	RESEARCH	ILLINOIS, UNIV. OF
805436-011	OH	RESEARCH	HEIDELBERG COLLEGE
805441-015	TX	RESEARCH	TEXAS A&M RES. FDN.
805443-012	OH	RESEARCH	CINCINNATI, CITY OF
805443-013	OH	RESEARCH	CINCINNATI, CITY OF
805447-011	CA	RESEARCH	CALIFORNIA STATE DEPT. OF HEALTH
805454-011	ME	DEMONSTRATION	COBBOSSEE WATERSHED DIST.
805455-020	KS	RESEARCH	KANSAS, UNIV. OF
805457-011	CO	RESEARCH	COLORADO STATE UNIV.
805474-011	TX	RESEARCH	TEXAS A&M RES. FDN.
805476-020	IL	RESEARCH	ILLINOIS, UNIV. OF
805477-020	RI	RESEARCH	RHODE ISLAND, UNIV. OF
805479-010	MO	DEMONSTRATION	SAINT LOUIS CNTY.
805482-020	NY	RESEARCH	COLUMBIA UNIV.
805497-010	FL	RESEARCH	FLORIDA, UNIV. OF
805500-012	PA	RESEARCH	PENNSYLVANIA STATE UNIV.
805501-011	NJ	RESEARCH	NEW JERSEY DEPT. OF ENVRN. PROTECTION
805528-011	IN	RESEARCH	MUNCIE SAN. DIST.
805529-020	FL	RESEARCH	FLORIDA, UNIV. OF

GRANT NUMBER	STATE	PROGRAM	APPLICANT
805532-020	CA	RESEARCH	CALIFORNIA, UNIV. OF
805534-011	AR	RESEARCH	ARKANSAS, UNIV. OF
805552-020	MA	RESEARCH	MASSACHUSETTS INST. OF TECH.
805554-012	NC	RESEARCH	NORTH CAROLINA STATE UNIV.
805560-020	FL	RESEARCH	FLORIDA, UNIV. OF
805563-010	MI	RESEARCH	MICHIGAN STATE UNIV.
805565-011	MI	RESEARCH	MICHIGAN TECH. UNIV.
805572-011	NY	RESEARCH	NEW YORK STATE UNIV.
805576-012	OH	RESEARCH	CINCINNATI, UNIV. OF
805580-010	FL	RESEARCH	FLORIDA TECH. UNIV.
805588-015	IL	RESEARCH	ILLINOIS, UNIV. OF
805588-017	IL	RESEARCH	ILLINOIS, UNIV. OF
805595-020	NC	RESEARCH	NORTH CAROLINA STATE UNIV.
805598-020	PA	RESEARCH	PENNSYLVANIA DEPT. OF ENVRN. RESOURCES
805602-011	WA	RESEARCH	SEATTLE, MUN. OF METRO.
805606-011	TN	RESEARCH	TENNESSEE, UNIV. OF
805613-011	MD	RESEARCH	MARYLAND ENVRN. SERVICES
805620-012	VA	RESEARCH	MITRE CORP.
805622-011	NC	RESEARCH	DUKE UNIV.
805623-011	VA	RESEARCH	MITRE CORP.
805624-020	MI	RESEARCH	MICHIGAN STATE UNIV.
805629-013	IL	RESEARCH	CHICAGO METRO. SAN. DIST.
805635-012	AZ	RESEARCH	ARIZONA, UNIV. OF
805636-011	MT	RESEARCH	MONTANA STATE UNIV.
805637-010	PA	RESEARCH	DREXEL UNIV.
805638-020	MA	RESEARCH	MASSACHUSETTS, UNIV. OF

GRANT NUMBER	STATE	PROGRAM	APPLICANT
805642-010	CA	RESEARCH	CALIFORNIA, UNIV. OF
805643-010	OH	RESEARCH	OHIO STATE UNIV.
805655-010	FL	DEMONSTRATION	REEDY CREEK IMPROVEMENT DIST.
805661-012	AK	RESEARCH	WAINWRIGHT, CITY OF
805661-013	AK	RESEARCH	WAINWRIGHT, CITY OF
805663-010	FL	RESEARCH	FLORIDA, UNIV. OF
805664-010	FL	RESEARCH	FLORIDA, UNIV. OF
805665-010	NV	RESEARCH	NEVADA MENTAL HEALTH INST.
805667-010	MN	RESEARCH	MINNESOTA, UNIV. OF
805671-011	CO	RESEARCH	DENVER, UNIV. OF
805689-010	DC	RESEARCH	HOWARD UNIV.
805691-011	NC	DEMONSTRATION	LAKE LURE, TOWN OF
805703-010	CA	RESEARCH	CALIFORNIA, UNIV. OF
805725-011	CO	RESEARCH	DENVER, UNIV. OF
805725-020	CO	RESEARCH	DENVER, UNIV. OF
805727-010	SC	DEMONSTRATION	SOUTH CAROLINA LAND RESOURCE
805730-010	MI	RESEARCH	MICHIGAN STATE UNIV.
805731-011	AZ	RESEARCH	ARIZONA, UNIV. OF
805736-010	CA	RESEARCH	CALIFORNIA INST. OF TECH.
805738-010	PA	RESEARCH	PENNSYLVANIA STATE UNIV.
805742-010	WI	DEMONSTRATION	WISCONSIN DEPT. OF NATURAL RESOURCES
805748-010	PA	DEMONSTRATION	GENERAL BATTERY CORP.
805750-010	CA	RESEARCH	STANFORD UNIV.
805760-010	CT	DEMONSTRATION	SEABOARD METAL FINISHING CO., INC.
805762-010	FL	RESEARCH	FLORIDA, UNIV. OF
805762-011	FL	RESEARCH	FLORIDA, UNIV. OF

GRANT NUMBER	STATE	PROGRAM	APPLICANT
805764-010	DC	RESEARCH	OFFICIAL ANALY. CHEM.. ASSOC. OF
805773-010	VA	RESEARCH	GEORGE MASON UNIV.
805781-010	NY	RESEARCH	CORNELL UNIV.
805786-010	NY	DEMONSTRATION	NEW YORK STATE DEPT. OF ENVRN. CONSERV
805788-011	CA	RESEARCH	JOHN MUIR INST. FOR ENVRN. STUDIES
805789-010	LA	RESEARCH	LOUISIANA STATE UNIV. & A&M COLLEGE
805790-010	VA	RESEARCH	VIRGINIA. UNIV. OF
805794-010	IL	RESEARCH	IIT RESEARCH INST.
805794-011	IL	RESEARCH	IIT RESEARCH INST.
805797-010	MA	RESEARCH	MASSACHUSETTS. UNIV. OF
805799-011	DC	RESEARCH	ENVIRONMENTAL LAW INST.
805807-010	MI	RESEARCH	MICHIGAN TECH. UNIV.
805809-010	WA	RESEARCH	WASHINGTON. STATE OF
805812-010	OH	RESEARCH	BATTELLE MEMORIAL INST.
805817-010	TX	RESEARCH	SOUTHWEST RES. INST.
805819-010	PA	RESEARCH	THOMAS JEFFERSON UNIV.
805822-010	TX	RESEARCH	NORTH TEXAS STATE UNIV.
805823-010	MD	DEMONSTRATION	HAGERSTOWN. CITY OF
805827-010	NJ	RESEARCH	RUTGERS UNIV.
805829-010	DC	RESEARCH	OFFICIAL ANALY. CHEM.. ASSOC. OF
805832-010	OR	RESEARCH	OREGON HEALTH SCIENCE CNTR.. UNIV. OF
805835-010	DE	RESEARCH	DELAWARE. UNIV. OF
805836-010	LA	DEMONSTRATION	EAST. BATON ROUGE. CITY-PARISH OF
805837-010	IA	RESEARCH	IOWA STATE UNIV.
805839-010	WA	RESEARCH	WASHINGTON. UNIV. OF
805839-011	WA	RESEARCH	WASHINGTON. UNIV. OF

GRANT NUMBER	STATE	PROGRAM	APPLICANT
805840-010	OH	RESEARCH	CINCINNATI, UNIV. OF
805842-010	UT	RESEARCH	UTAH STATE UNIV.
805843-010	NC	RESEARCH	NORTH CAROLINA, UNIV. OF
805846-010	WA	RESEARCH	FRED HUTCHINSON CANCER RES.
805847-010	PA	RESEARCH	PITTSBURGH, UNIV. OF
805856-010	IN	RESEARCH	PURDUE RES. FDN.
805856-012	IN	RESEARCH	PURDUE RES. FDN.
805859-010	VA	RESEARCH	VIRGINIA STATE WATER CNTRL. BD.
805859-011	VA	RESEARCH	VIRGINIA STATE WATER CNTRL. BD.
805860-010	GA	RESEARCH	GEORGIA, UNIV. OF
805863-010	OH	RESEARCH	NATIONAL WATER WELL ASSOC.
805868-011	NY	RESEARCH	AMERICAN SOCIETY OF CIVIL ENGRS.
805870-010	ID	RESEARCH	IDAHO, UNIV. OF
805871-010	CA	RESEARCH	CALIFORNIA, UNIV. OF
805872-010	LA	RESEARCH	LOUISIANA STATE UNIV. & A&M COLLEGE
805874-010	MD	RESEARCH	MARYLAND WATER RESOURCES ADMIN.
805874-011	MD	RESEARCH	MARYLAND WATER RESOURCES ADMIN.
805877-010	AR	RESEARCH	ARKANSAS, UNIV. OF
805881-010	NC	RESEARCH	EAST CAROLINA, UNIV. OF
805885-010	NY	RESEARCH	NEW YORK STATE UNIV.
805886-010	MA	RESEARCH	MASSACHUSETTS INST. OF TECH.
805893-010	TX	RESEARCH	TEXAS A&M RES. FDN.
805896-010	WA	RESEARCH	WASHINGTON STATE UNIV.
805897-010	NC	RESEARCH	RESEARCH TRIANGLE INST.
805899-010	UT	RESEARCH	UTAH, UNIV. OF
805900-010	CA	RESEARCH	MCFARLAND MUTUAL WATER CO.

GRANT NUMBER	STATE	PROGRAM	APPLICANT
805901-010	NJ	RESEARCH	RUTGERS UNIV.
805902-010	GA	RESEARCH	GEORGIA, UNIV. OF
805907-010	NJ	RESEARCH	RUTGERS UNIV.
805908-010	NJ	RESEARCH	RUTGERS UNIV.
805912-010	OR	RESEARCH	OREGON STATE UNIV.
805913-010	NY	RESEARCH	NEW YORK HEALTH RES., INC.
805916-010	NY	RESEARCH	MANHATTAN COLLEGE
805920-010	DC	RESEARCH	ENVIRONMENTAL LAW INST.
805921-010	CO	RESEARCH	COLORADO, UNIV. OF
805926-010	CO	RESEARCH	DENVER, UNIV. OF
805927-010	CA	RESEARCH	BAY AREA GOVTS., ASSN. OF
805929-010	WA	RESEARCH	BELLEVUE, CITY OF
805931-010	VA	RESEARCH	VIRGINIA POLY. INST. & STATE UNIV.
805932-010	MD	RESEARCH	MARYLAND, UNIV. OF
805934-010	NY	RESEARCH	NEW YORK STATE DEPT. OF ENVRN. CONSERV
805935-010	MT	RESEARCH	MONTANA STATE UNIV.
805936-010	OH	RESEARCH	BEDWAY COAL CO.
805937-010	DC	RESEARCH	PUBLIC TECHNOLOGY, INC.
805939-010	CO	RESEARCH	DENVER, UNIV. OF
805944-010	CO	RESEARCH	WRIGHT-INGRAHAM INST.
805951-010	VA	RESEARCH	VIRGINIA INST. OF MARINE SCI.
805953-010	VA	RESEARCH	VIRGINIA INST. OF MARINE SCI.
805954-010	MD	RESEARCH	MARYLAND, UNIV. OF
805956-010	MI	RESEARCH	MICHIGAN, UNIV. OF
805956-011	MI	RESEARCH	MICHIGAN, UNIV. OF
805959-010	MD	RESEARCH	JOHNS HOPKINS UNIV.

GRANT NUMBER	STATE	PROGRAM	APPLICANT
805962-010	MD	RESEARCH	JOHNS HOPKINS UNIV.
805963-010	MD	RESEARCH	JOHNS HOPKINS UNIV.
805964-010	MD	RESEARCH	JOHNS HOPKINS UNIV.
805965-010	MD	RESEARCH	JOHNS HOPKINS UNIV.
805969-010	IL	RESEARCH	ILLINOIS, UNIV. OF
805971-010	OH	RESEARCH	CINCINNATI, UNIV. OF
805972-010	GA	RESEARCH	MOREHOUSE COLLEGE
805974-010	VA	RESEARCH	VIRGINIA INST. OF MARINE SCI.
805976-010	MD	RESEARCH	MARYLAND WATER RESOURCES ADMIN.
805977-010	DC	RESEARCH	AMERICAN UNIV.
805978-010	IN	RESEARCH	HOLCOMB RES. INST.
805982-010	VA	RESEARCH	VIRGINIA INST. OF MARINE SCI.
805986-010	IL	RESEARCH	RUSH PRESBYTERIAN-ST. LUKE'S MED. CTR.
805990-010	CA	RESEARCH	SRI INTERNATIONAL
805993-010	MA	RESEARCH	MASSACHUSETTS, UNIV. OF
805994-010	MI	RESEARCH	MICHIGAN, UNIV. OF
805999-010	CA	RESEARCH	CALIFORNIA, UNIV. OF
806001-010	VA	RESEARCH	VIRGINIA INST. OF MARINE SCI.
806002-010	VA	RESEARCH	VIRGINIA INST. OF MARINE SCI.
806003-010	OR	RESEARCH	CLATSKANIE, CITY OF
806004-010	DC	RESEARCH	HOWARD UNIV.
806005-010	MO	RESEARCH	WASHINGTON UNIV.
806005-011	MO	RESEARCH	WASHINGTON UNIV.
806006-010	CA	RESEARCH	LOMA LINDA UNIV.
806009-010	ME	RESEARCH	MAINE, UNIV. OF
806012-010	VA	RESEARCH	VIRGINIA INST. OF MARINE SCI.

GRANT NUMBER	STATE	PROGRAM	APPLICANT
806013-010	OR	RESEARCH	OREGON STATE UNIV.
806016-010	CO	RESEARCH	COLORADO STATE UNIV.
806017-010	NY	RESEARCH	NEW YORK STATE DEPT. OF ENVRN. CONSERV
806020-010	MN	RESEARCH	MINNESOTA, UNIV. OF
806022-010	TX	RESEARCH	HOUSTON, UNIV. OF
806025-010	OH	RESEARCH	OHIO AGR. RES & DEV. CTR.
806030-010	MI	RESEARCH	MICHIGAN, UNIV. OF
806032-010	OR	RESEARCH	OREGON, UNIV. OF HLTH SCI CTR
806035-010	WA	RESEARCH	WASHINGTON, UNIV. OF
806036-010	FC	RESEARCH	AUCKLAND, UNIV. OF
806041-010	MD	RESEARCH	MARYLAND, UNIV. OF
806042-010	CA	RESEARCH	CALIFORNIA, UNIV. OF
806044-010	MD	RESEARCH	RADIATION RES. SOC.
806046-010	TX	RESEARCH	TEXAS, UNIV. OF
806047-010	MT	RESEARCH	HELENA, CITY OF
806048-010	PA	RESEARCH	PENNSYLVANIA STATE UNIV.
806049-010	PA	RESEARCH	SUSQUEHANNA UNIV.
806050-010	MA	RESEARCH	MASSACHUSETTS INST. OF TECH.
806051-010	CO	RESEARCH	COLORADO STATE UNIV.
806053-010	CA	RESEARCH	SRI INTERNATIONAL
806057-010	KY	RESEARCH	ACAROLOGICAL SOCIETY OF AMERICA
806059-010	IA	RESEARCH	IOWA, UNIV. OF
806061-010	CA	RESEARCH	STANFORD UNIV.
806062-010	IL	RESEARCH	IIT RESEARCH INST.
806064-010	IL	RESEARCH	NORTHWESTERN UNIV.
806065-010	MI	RESEARCH	MICHIGAN STATE UNIV.

GRANT NUMBER	STATE	PROGRAM	APPLICANT
806066-010	MA	RESEARCH	TUFTS UNIV.
806070-010	NC	RESEARCH	NORTH CAROLINA, UNIV. OF
806070-011	NC	RESEARCH	NORTH CAROLINA, UNIV. OF
806071-010	MA	DEMONSTRATION	STURBRIDGE, TOWN OF
806072-010	RI	RESEARCH	RHODE ISLAND, UNIV. OF
806073-010	TX	RESEARCH	HOUSTON, UNIV. OF
806074-010	MD	RESEARCH	JOHNS HOPKINS UNIV.
806080-010	FL	RESEARCH	FLORIDA, UNIV. OF
806081-010	NY	DEMONSTRATION	ITHACA, CITY OF
806082-010	MT	RESEARCH	NORTHERN CHEYENNE TRIBAL COUNCIL
806083-010	MN	RESEARCH	MINNESOTA, UNIV. OF
806087-010	OR	RESEARCH	OREGON STATE UNIV.
806088-010	CA	RESEARCH	JOHN MUIR INST. FOR ENVRN. STUDIES
806088-020	CA	RESEARCH	JOHN MUIR INST. FOR ENVRN. STUDIES
806089-010	IL	RESEARCH	AMERICAN SOCIETY OF ANIMAL SCIENCE
806091-010	CA	RESEARCH	SRI INTERNATIONAL
806092-010	NM	RESEARCH	NEW MEXICO INST. OF MINING & TECH.
806093-010	CA	RESEARCH	SRI INTERNATIONAL
806094-010	CO	RESEARCH	COLORADO STATE UNIV.
806099-010	FL	RESEARCH	SOUTH FLORIDA, UNIV. OF
806102-011	WA	RESEARCH	WASHINGTON, UNIV. OF
806103-010	TX	RESEARCH	TEXAS A&M RES. FDN.
806107-010	CA	RESEARCH	CALIFORNIA, UNIV. OF
806108-010	FL	RESEARCH	WEST FLORIDA, UNIV. OF
806110-010	VI	RESEARCH	VIRGIN ISLANDS, COLLEGE OF THE
806111-010	CO	RESEARCH	COLORADO STATE UNIV.

GRANT NUMBER	STATE	PROGRAM	APPLICANT
806115-010	DC	RESEARCH	NATIONAL ACADEMY OF SCIENCES
806116-010	MA	RESEARCH	LOWELL, UNIV. OF
806121-010	FL	RESEARCH	WEST FLORIDA, UNIV. OF
806124-010	WA	RESEARCH	WASHINGTON STATE UNIV.
806126-010	NY	RESEARCH	NEW YORK STATE DEPT. OF HEALTH
806127-010	WA	RESEARCH	WASHINGTON, UNIV. OF
806130-011	FL	RESEARCH	FLORIDA STATE UNIV.
806137-010	WI	RESEARCH	WISCONSIN, UNIV. OF
806140-010	NY	RESEARCH	CORNELL UNIV.
806143-010	FL	RESEARCH	FLORIDA STATE UNIV.
806144-010	MN	RESEARCH	WESTERN LAKE SUPERIOR SANITARY DIST.
806146-010	WA	RESEARCH	WASHINGTON, UNIV. OF
806148-010	CO	RESEARCH	COLORADO STATE UNIV.
806149-010	MI	RESEARCH	MICHIGAN, UNIV. OF
806151-010	PA	RESEARCH	ACADEMY OF NATURAL SCIENCES
806154-010	DC	RESEARCH	RACHEL CARSON TRUST
806155-010	NY	RESEARCH	SIERRA CLUB
806156-010	CO	RESEARCH	DENVER, UNIV. OF
806157-010	TX	RESEARCH	NORTH TEXAS STATE UNIV.
806159-010	MI	RESEARCH	MICHIGAN, UNIV. OF
806160-010	CA	RESEARCH	RAMONA MUNICIPAL WATER DISTRICT
806161-010	GA	RESEARCH	GEORGIA, UNIV. OF
806162-010	FL	RESEARCH	FLORIDA STATE UNIV.
806175-010	MN	RESEARCH	MINNESOTA, UNIV. OF
806176-010	WA	RESEARCH	WASHINGTON STATE UNIV.
806178-010	MA	RESEARCH	TUFTS UNIV.

GRANT NUMBER	STATE	PROGRAM	APPLICANT
806184-010	IN	RESEARCH	DEPAUW, UNIV. OF
806188-010	CA	RESEARCH	APPLIED AQUATIC RESOURCES INST
806189-010	MD	RESEARCH	CHESAPEAKE RESEARCH CONSORTIUM
806191-010	OK	DEMONSTRATION	INTER-TRIBAL COUNCIL, INC.
806192-010	AR	RESEARCH	ARKANSAS, UNIV. OF
806195-010	ID	RESEARCH	IDAHO, UNIV. OF
806196-010	FL	RESEARCH	FLORIDA TECH, UNIV.
806200-010	OH	RESEARCH	OHIO STATE UNIV.
806204-010	TX	DEMONSTRATION	LCC INST. OF WATER RES.
806207-010	VA	RESEARCH	VIRGINIA, UNIV. OF
806208-010	NJ	RESEARCH	PRINCETON UNIV.
806209-010	MA	RESEARCH	CLARK UNIVERSITY
806210-010	NC	RESEARCH	NORTH CAROLINA, UNIV. OF
806212-010	MS	RESEARCH	SOUTHERNMMISSISSIPPI,UUNIV,OOF
806213-010	AL	RESEARCH	AUBURN UNIV.
806214-010	MI	RESEARCH	MICHIGAN STATE UNIV.
806215-010	MA	RESEARCH	TUFTS UNIV.
806216-010	AL	RESEARCH	SOUTHERN RES. INST.
806217-010	AL	RESEARCH	SOUTHERN RES. INST.
806222-010	CO	RESEARCH	DENVER, UNIV. OF
806224-010	OR	RESEARCH	OREGON STATE UNIV.
806225-010	OR	RESEARCH	OREGON STATE UNIV.
806229-010	VA	RESEARCH	HAMPTON INST.
806230-010	TX	RESEARCH	TEXAS SOUTHERN UNIV.
806231-010	WV	RESEARCH	WEST VIRGINIA UNIV.
806234-010	WV	RESEARCH	NATIONAL STEEL CORP

GRANT NUMBER	STATE	PROGRAM	APPLICANT
806236-010	DC	RESEARCH	D.C. RESOURCES FOR THE FUTURE
806240-010	OH	RESEARCH	CINCINNATI, UNIV. OF
806245-010	MA	RESEARCH	LOWELL, UNIV. OF
806247-010	FL	RESEARCH	AMERICAN ELECTROPLATERS' SOCIETY, INC.
806255-010	TN	RESEARCH	TENNESSEE TECH. UNIV.
806257-010	CA	RESEARCH	CALIFORNIA, UNIV. OF
806260-010	CA	RESEARCH	CALIFORNIA, UNIV. OF
806261-010	TX	RESEARCH	TEXAS, UNIV. OF
806263-010	MD	RESEARCH	MARYLAND, UNIV. OF
806270-010	CA	RESEARCH	CALIFORNIA, UNIV. OF
806271-010	NJ	RESEARCH	NEW JERSEY INST. OF TECH.
806274-010	OR	RESEARCH	OREGON GRAD CTR
806277-010	TX	RESEARCH	TEXAS A&M RES. FDN.
806278-010	CO	RESEARCH	COLORADO STATE UNIV.
806279-010	PA	RESEARCH	THOMAS JEFFERSON UNIV.
806282-010	MN	RESEARCH	MINNESOTA, UNIV. OF
806287-010	OR	RESEARCH	OREGON STATE UNIV.
806293-010	IL	RESEARCH	ILLINOIS, UNIV. OF
806294-010	MI	RESEARCH	MICHIGAN, UNIV. OF
806303-010	NM	RESEARCH	NEW MEXICO, UNIV. OF
806306-010	MD	RESEARCH	MARYLAND WATER RESOURCES ADMIN.
806307-010	FL	RESEARCH	MIAMI, UNIV. OF
806310-010	VA	RESEAPCH	VIRGINIA STATE WASTE CNTRL. BD.
806313-010	LA	RESEARCH	LOUISIANA STATE UNIV. & A&M COLLEGE
806314-010	AL	RESEARCH	AUBURN UNIV.
806315-010	MO	RESEARCH	MIDWEST RES. INST.

GRANT NUMBER	STATE	PROGRAM	APPLICANT
806316-010	SC	RESEARCH	CLEMSON UNIV.
806323-010	WA	RESEARCH	SEATTLE, MUN. OF METRO.
806326-010	IL	RESEARCH	IIT RESEARCH INST.
806327-010	IL	RESEARCH	IIT RESEARCH INST.
806333-010	OH	RESEARCH	CUYAHOGA COUNTY COMM., BD. OF
806334-010	FL	RESEARCH	FLORIDA STATE UNIV.
806336-010	WI	RESEARCH	MILWAUKEE CITY
806339-010	FL	RESEARCH	WEST FLORIDA, UNIV. OF
806341-010	NY	RESEARCH	NEW YORK STATE ENERGY RES & DEV.
806343-010	MD	RESEARCH	MARYLAND WATER RESOURCES ADMIN.
806347-010	MA	RESEARCH	BOSTON COLLEGE
806348-010	AZ	RESEARCH	ARIZONA, UNIV. OF
806349-010	OR	DEMONSTRATION	OREGON DEPT OF ENVRN QUALITY
806350-010	MA	RESEARCH	MASSACHUSETTS INST. OF TECH.
806351-010	TX	RESEARCH	TEXAS A&M RES. FDN.
806357-010	CA	RESEARCH	BAY AREA GOVTS., ASSN. OF
806359-010	TX	RESEARCH	TEXAS, STATE OF
806359-011	TX	RESEARCH	TEXAS, STATE OF
806365-010	PA	RESEARCH	CARNEGIE-MELLON UNIV.
806368-010	AL	RESEARCH	AUBURN UNIV.
806386-010	IL	RESEARCH	IIT RESEARCH INST.
806392-010	GA	RESEARCH	EMORY UNIV. SCH. OF MED.
806393-010	NC	RESEARCH	DUKE UNIV.
806396-010	CA	RESEARCH	CALIFORNIA DEPT OF HEALTH SERVICES
806435-010	CA	RESEARCH	CALIFORNIA, UNIV. OF
806446-010	DC	RESEARCH	INTERNATIONAL CITY MANAGEMENT ASSOC.

GRANT NUMBER	STATE	PROGRAM	APPLICANT
806471-010	DC	RESEARCH	ANALYTIC CHEMISTS, ASSOC OF
806864-010	WI	RESEARCH	WISCONSIN, UNIV. OF
806890-010	FL	RESEARCH	DADE CNTY, DEPT. PUB. HLTH.

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		A L A B A M A				
** RESEARCH **						
AUBURN UNIV. AUBURN	METABOLISM OF POLYAROMATIC HYDROCARBONS BY MIXED FUNCTION OXIDASES OF MARINE ORGANISMS	HOBBS, E.	80621301	NEW	78/08/16	$49,940
AUBURN UNIV. AUBURN	OXIDATION AND CONJUGATION OF CARCINOGENIC HYDROCARBONS IN MARINE ANIMALS	ROUSE, R.	80636801	NEW	78/08/18	$55,587
AUBURN UNIVERSITY AUBURN	ENGINEERING PERFORMANCE OF THERMOPLASTIC WATER WELL CASINGS	WARMAN, J.	80501502	CONT	78/08/02	$45,102
AUBURN UNIVERSITY AUBURN	DEWATERING OF FLUE GAS CLEANING WASTES BY GRAVITY SEDIMENTATION	WARMAN, J.	80631401	NEW	78/09/15	$34,829
SOUTHERN RES. INST. BIRMINGHAM	A PROGRAM FOR IMPROVING THE EPA'S MATHEMATICAL MODEL OF ELECTROSTATIC PRECIPITATION	MCDONALD, J.	80621601	NEW	78/09/01	$238,906
SOUTHERN RES. INST. BIRMINGHAM	A STUDY TO IMPROVE A TECHNIQUE FOR PREDICTING FLY ASH RESISTIVITY FROM COAL TO COAL ASH ANALYSIS	BICKELHAUPT, R.	80621701	NEW	78/08/17	$80,000
SOUTHERN RESEARCH INST. BIRMINGHAM	APPLICABILITY OF ELECTROSTATIC PRECIPITATORS FOR NONFERROUS METALS CONTROL	OGLESBY, S.	80495503	CONT	78/09/28	$111,991
** FELLOWSHIPS **						
ALABAMA, SO., UNIV. OF MOBILE	BIOLOGY	KINSAUL, S.	91121401	NEW	78/06/15	$6,036
AUBURN, UNIV. OF AUBURN	MATH. ED.	COX, B.	91127501	NEW	78/07/10	$6,000
TUSKEGEE INSTITUTE TUSKEGEE	WATER QUALITY CONTROL	ETHRIDGE, S.	91130601	NEW	78/07/20	$3,306

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		A L A B A M A				
** FELLOWSHIPS **						
			91130601	INCR	78/08/18	$1,930

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		A L A S K A				
** RESEARCH **						
ALASKA, UNIV. OF FAIRBANKS	ALASKAN OIL SEEPS: THEIR CHEMICAL & BIOLOGICAL EFFECTS ON THE ENVIRONMENT	SHAW, D. G.	80392203	INCR	78/09/15	$71,533
ALASKA, UNIV. OF FAIRBANKS	EFFECT OF WATER SOLUBLE FRACTION OF CRUDE OIL ON CONDITION AND GUT MORPHOLOGY IN SALMON	SMITH, R.	80394503	INCR	78/07/13	$27,844
WAINWRIGHT, CITY OF WAINWRIGHT	ALASKA VILLAGE RESEARCH PROJECT	NAYAKIK, C.	80566101	INCR	78/06/23	$117,000
			80566101	INCR	78/07/20	$515,223
** TRAINING **						
SOUTHEAST ALASKA CONSRV. COUNCIL, INC JUNEAU	STATEWIDE PUBLIC PARTICIPATION IN WATER QUALITY MANAGEMENT IN ALASKA	HAWK, RON	90084601	NEW	78/06/23	$7,000

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		A R I Z O N A				
** RESEARCH **						
ARIZONA, UNIV. OF TUCSON	ENVIRONMENTAL MONITORING & ASSESSMENT OF COAL STRIP MINING & RECLAMATION IN THE FOUR CORNERS AREA	FOGEL, MARTIN M.	8046790 4	CONT	78/08/21	$196,492
ARIZONA, UNIV. OF TUCSON	ANALYSIS AND CHARACTERIZATION OF ORGANIC CARBON COMPOUND IN ATMOSHERIC PARTICLATE MATTER	FREISER, H	80542701	INCR	78/05/15	$20,000
ARIZONA, UNIV. OF TUCSON	SOLID WASTE REDUCTION AND MASS MEDIA CAMPAIGNS	RATHJE, W. L.	80563501	INCR	78/04/26	$5,014
ARIZONA, UNIV. OF TUCSON	APPLICATION LAPIDUS-AMUNDSON SOLUTE MOVEMENT MODEL TO PREDICT SOIL ATTENNUATION OF LEACHAGE METALS	FULLER, W	80573101	INCR	78/08/14	$75,000
ARIZONA, UNIV. OF TUCSON	HEALTH EFFECTS OF THE SULFUR OXIDE/PARTICULATE COMPLEX	DODGE, R.	80634801	NEW	78/08/29	$191,113
** TRAINING **						
ARIZONA, UNIV. OF TUCSON	ENGINEERING EXPERIMENT STATION	SIERKA, R.	90085901	NEW	78/08/01	$18,850

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		A R K A N S A S				
** RESEARCH **						
ARKANSAS, UNIV. OF FAYETTEVILLE	DEVELOPMENT OF REAL-TIME AEROSOL SIZE SPECTRUM ANALYZER EMPLOYING RELAXATION-TIME MEASUREMENTS	TESTERMAN, M.	80442903	CONT	78/05/10	$15,000
			80442903	INCR	78/07/10	$25,388
ARKANSAS, UNIV. OF FAYETTEVILLE	MEASUREMENT OF VOLATILE CHEMICAL EMISSIONS FROM WW BASINS	THIBODEAUX, L. J.	80553401	INCR	78/05/31	$30,000
ARKANSAS, UNIV. OF PINE BLUFF	PRESERVATION & DETER. OF CR (III) &/OR CR(VI) IN WATERS	DUHART, B.	80587701	NEW	78/07/31	$44,460
ARKANSAS, UNIV. OF FAYETTEVILLE	TRANSPORT DIAGONSIS OF HIGH RESISTIVITY FLY ASH IN ELECTROSTATIC PRECIPITATORS BY LASER DOPPLER INST	TESTERMAN, M. K.	80619201	NEW	78/08/07	$149,014

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		C A L I F O R N I A				
** RESEARCH **						
APPLIED AQUATIC RESOURCES INST ENCINITAS	PRELIMINARY ASSESMENT OF BY-PRODUCT CONTAMINATION IN AN AQUACULTURE WASTEWATER TREATMENT SYSTEM	ALSTEN,CHRISTOPHER	80618801	NEW	78/08/18	$30,000
BAY AREA GOVTS,, ASSN. OF BERKELEY	STORMWATER POLL. ANALYSIS WITH MAC MODEL IN CONTINUING 208 PLANNING	LITWIN, Y.	80592701	NEW	78/04/28	$45,000
BAY AREA GOVTS,, ASSN. OF BERKELEY	BIOLOGICAL TREATMENT OF STORMWATER RUNOFF BY A MARSH/FLOOD BASIN	DAVIS, J.	80635701	NEW	78/09/01	$74,441
CALIFORNIA DEPT OF WATER RES SACRAMENTO	WATER CONSERVATION AND THE DROUGHT	KOYASAKA, J.	80626201	NEW	78/09/01	$50,000
CALIFORNIA DEPT. OF HEALTH SVCS. BERKELEY	INCIDENCE OF CANCER AS RELATED TO INDUSTRIAL EMISSIONS IN CONTRA COSTA COUNTY	AUSTIN, D.	80639601	NEW	78/08/31	$301,973
CALIFORNIA INST. OF TECH. PASADENA	STUDIES IN POLLUTION AEROSOL DYNAMICS	FRIEDLANDER, S.	80573601	NEW	78/06/07	$60,000
CALIFORNIA INST. OF TECHNOLOGY PASADENA	DEVELOPMENT&APPLICATION MULTIPLE TRACER TECHNIQUES STUDY POLLUTION TRANSPORT & DISPERSION ATMOSPHERE	SHAIR, F. H.	80499001	INCR	78/06/29	$45,511
CALIFORNIA STATE DEPT. OF HEALTH SACRAMENTO	HAZARDOUS WASTE SAMPLING, ANALYSIS, AND COMPATIBILITY STUDY	STEPHENS, R. D.	80469201	INCP	78/04/03	$50,000
			80469201	INCR	78/06/29	$98,400
CALIFORNIA STATE DEPT. OF HEALTH SACRAMENTO	IMPROVEMENT & EVALUATION OF METHODS FOR SULFATE ANALYSIS	WESOLOWSKI, J.	80544701	INCR	78/08/23	$43,489

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		C A L I F O R N I A				
** RESEARCH **						
CALIFORNIA WATER RES CTRL BD SACRAMENTO	RURAL WASTEWATER DISPOSAL ALTERNATIVES	GHIRELLI, R.	80594201	NEW	78/09/20	$50,000
CALIFORNIA, UNIV OF LA JOLLA	EFFECTS OF SOME REPRESENTATIVE COMPOUNDS IN PETROLEUM REFINERY EFFLUENTS ON MARINE PHYTOPLANKTON	THOMAS, W.	80626001	NEW	78/09/18	$141,954
CALIFORNIA, UNIV. OF BERKELEY	ASBESTOS IN DOMESTIC WATER SUPPLIES & CANCER INCIDENCE IN 5 CALIFORNIA COUNTIES	COOPER, R.	80436602	INCR	78/07/10	$49,433
CALIFORNIA, UNIV. OF RIVERSIDE	DETERMINATION AND PREDICTION OF CHEMICAL FORMS OF TRACE METLAS IN SEWAGE SLUDGES-AMENDED SOILS.	LUND L.	80451603	CONT	78/08/21	$103,617
CALIFORNIA, UNIV. OF RIVERSIDE	MEASUREMENT OF HALOGENATED POLLUTANTS & OTHER TRACE GASES IN THE TROPOSPHERE BY LONG-PATH IN-SITU IN	PITTS, J.	80454603	CONT	78/05/08	$82,671
CALIFORNIA, UNIV. OF SANTA BARBARA	EFFECT OF LOW LEVELS OF SULFURIC ACID MIST EXPOSURE ON HUMAN PULMONARY FUNCTION	HORVATH, S.	80485302	CONT	78/06/19	$444,574
CALIFORNIA, UNIV. OF DAVIS	ANALYSIS OF BIOLOGICAL WASTEWATER TREATMENT PLANT PERFORMANCE	SCHROEDER, E.	80509701	INCR	78/09/13	$49,715
CALIFORNIA, UNIV. OF DAVIS	MUCUS GLYCOPROTEINS SECRETED BY TRACHEAL EXPLANTS FROM RATS EXPOSED TO POLLUTANTS	LAST, J.	80535502	CONT	78/08/16	$42,685
CALIFORNIA, UNIV. OF BERKLEY	ANALYSIS OF NCHS DATA ON NONMELANOMA SKIN CANCER	SCOTT, E.	80537901	INCR	78/08/16	$10,024
CALIFORNIA, UNIV. OF RIVERSIDE	IMPACT OF OXIDANT AIR POLLUTANTS ON A WESTERN CONIFEROUS FOREST ECOSYSTEM	TAYLOR, C.	80541002	CONT	78/06/23	$219,168

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		C A L I F O R N I A				
** RESEARCH **						
CALIFORNIA, UNIV. OF BERKELEY	FUNDAMENTAL CONSIDERATIONS IN THE PREPARATION OF REFUSE DERIVED FUELS	TREZEK, G.	80541402	CONT	78/05/31	$121,890
CALIFORNIA, UNIV. OF IRVINE	CHEMICAL REACTIONS OF ATMOSPHERIC HALOGENATED SPECIES	MOLINA, M.	80553202	CONT	78/08/31	$90,123
CALIFORNIA, UNIV. OF RIVERSIDE	RAPID FIELD MEASUREMENT OF ORGANOPHOSPHORUS PESTICIDE RESIDUES	GUNTHER, F.	80564201	NEW	78/08/04	$51,793
CALIFORNIA, UNIV. OF DAVIS	PACKED BED GAS PRODUCERS TO PRODUCTION OF COMBUST. GASES FROM MUN. WASTEWATER SLUDGE	SCHROEDER, E.	80570301	NEW	78/07/10	$53,177
CALIFORNIA, UNIV. OF DAVIS	HISTOCHEMISTRY & QUANTIFICATION OF MUCOUS ELEMENTS IN EPA BEAGLES	WHEELDON, E.	80587101	NEW	78/05/19	$37,922
CALIFORNIA, UNIV. OF BERKELEY	PYRETHROID CHEMISTRY & TOXICOLOGY	CASIDA, J.	80599901	NEW	78/06/20	$56,995
CALIFORNIA, UNIV. OF RIVERSIDE	INVESTIGATION OF FILTER ARTIFACTS WHEN SAMPLING AIRBORNE ORGANIC PARTICULATES:	PITTS, J.	80604201	NEW	78/06/27	$60,000
CALIFORNIA, UNIV. OF BERKELEY	FACTORS AFFECTING ACTIVATED SLUDGE BULKING	JENKINS, D.	80610701	NEW	78/08/16	$60,000
CALIFORNIA, UNIV. OF LOS ANGELES	SCAVENGING OF GASES AND AEROSOL PARTICLES BY CLOUDS AND PRECIPITATION IN THE ATMOSPHERE	PRUPPACHER, H.	80625701	NEW	78/09/06	$60,667
CALIFORNIA, UNIV. OF RIVERSIDE	DEVELOPMENT OF A PROTOCOL FOR TESTING EFFECTS OF TOXIC SUBSTANCES ON PLANTS	THOMPSON, C	80627001	NEW	78/07/31	$39,976

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		C A L I F O R N I A				
** RESEARCH **						
CALIFORNIA, UNIV. OF DAVIS	RAPID ASSAYS OF PLANT RESPONSE TO HERBICIDE TREATMENT	RAPPAPORT, L.	80643501	NEW	78/09/20	$9,000
HYDROCOMP INC. PALO ALTO	COMPREHENSIVE PACKING FOR SIMULATION OF WATERSHED HYDROLOGY & WATER QUALITY	JOHANSON, R. C.	80497101	INCR	78/05/24	$95,285
JOHN MUIR INST. FOR ENVRN. STUDIES NAPA	REGIONAL VISIBILITY: THE COLORADO PLATEAU	WALTHER, G.	80578801	INCR	78/08/21	$17,482
JOHN MUIR INST. FOR ENVRN. STUDIES NAPA	BIOLOGICAL CONTROL IN A URBAN PEST MANAGEMENT SYSTEM	OLKOWSKI, W.	80608802	CONT	78/09/01	$50,000
JOHN MUIR INSTITUTE, INC. NAPA	BIOLOGICAL CONTROL IN AN URBAN PEST MANAGEMENT SYSTEM	OLKOWSKI, W.	80608801	NEW	78/08/29	$15,500
LOMA LINDA UNIV. LOMA LINDA	ASSESSMENT OF CADMIUM EXPOSURE AND TOXICITY RISK IN AN AMERICAN VEGETARIAN POPULATION	WILLARD, R.	80600601	NEW	78/08/11	$234,563
MCFARLAND MUTUAL WATER CO. MCFARLAND	REMOVAL OF NITRATE FROM CONTAMINATED WATER SUPPLIES FOR PUBLIC USE	KARTINEN, E.	80590001	NEW	78/05/08	$187,693
RAMONA MUNICIPAL WATER DISTRICT RAMONA	SELENIUM REMOVAL FROM GROUNDWATER	SUTHERLAND, A.	80616001	NEW	78/07/21	$53,301
SRI INTERNATIONAL MENLO PARK	ATMOSPHERIC MEASUREMENTS OF TOXIC ORGANIC CHEMICALS	SINGH, H.	80599001	NEW	78/07/25	$99,750
SRI INTERNATIONAL MENLO PARK	AUTOMATED LOW-COST GC/MS PROTOCOL FOR MONITORING ORGNANICS IN DRINKING WATER	FRATONI, S.	80605301	NEW	78/09/15	$49,926

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		C A L I F O R N I A				
** RESEARCH **						
SRI INTERNATIONAL MENLO PARK	FIELD TEST KIT FOR CHARACTERIZING OIL-BRINE EFFLUENTS FROM OFFSHORE DRILLIG PLAFORMS	SMITH, J.	80609101	NEW	78/09/06	$65,597
SRI INTERNATIONAL MENLO PARK	REACTIONS OF OXY RADICALS IN THE ATMOSPHERE	HENDRY, D.	80609301	NEW	78/06/23	$59,938
STANFORD UNIV. STANFORD	GROUNDWATER INJECTION OF RECLAIMED WATER IN PALO ALTO	MCCARTY, P.	80443103	CONT	78/08/02	$304,975
			80443103	INCR	78/09/11	$10,225
STANFORD UNIV. STANFORD	FEASIBILITY OF USING CHLORINE DIOXIDE IN THE DISINFECTION OF MUNICIPAL WASTEWATER EFFLUENTS	ROBERTS, P.	80542602	CONT	78/08/16	$67,500
STANFORD UNIV. STANFORD	REMOTE ATMOSPHERIC MEASUREMENT OF SO2 AND CH4 USING A LINBO3 TUNABLE SOURCE	BYER, R.	80575001	NEW	78/05/31	$25,000
STANFORD UNIV. STANFORD	INVESTIGATION OF FLUID BED COMBUSTION OF MUNICIPAL SOLID WASTE	EUSTIS, R.	80606101	NEW	78/08/09	$100,000
WOODWARD CLYDE CONSULTANTS SAN FRANCISCO	WATER QUALITY AND BIOLOGICAL EFFECTS OF URBAN RUNOFF ON COYOTE CREEK	SARTOR, J.	80541801	INCR	78/07/03	$60,000
** DEMONSTRATION **						
SANTA BARBARA, CITY OF SANTA BARBARA	GIBRALTAR LAKE RESTORATION PROJECT	SHIFFMAN, DAVID W.	80481401	NEW	78/04/10	$1,127,500
** TRAINING **						
CALIFORNIA POLYTECHNIC STATE UNIV. SAN LUIS OBISPO	CAL POLY UNDERGRADUATE AND SUMMER TRAINING IN AIR POLLUTION	COTA, H.	90067901	INCR	78/07/14	$4,572

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		C A L I F O R N I A				
** TRAINING **						
CALIFORNIA STATE UNIV. SACRAMENTO	REVISION AND EXPANSION OF OPERATION OF WASTE WATER TREATMENT PLANTS	KERRI, K.	90069001	INCR	78/09/13	$57,200
CALIFORNIA, UNIV. OF DAVIS	AIR POLLUTION AREA TRAINING	CHANG, D.	90060001	NEW	78/07/24	$67,596
CALIFORNIA, UNIV. OF DAVIS	STATEWIDE PUBLIC PARTICIPATION IN WATER QUALITY MANAGEMENT IN CALIFORNIA	CHAMER, J.	90087501	NEW	78/07/14	$6,731
CALIFORNIA, UNIV. OF BERKELEY	SANITARY ENGINEERING TRAINING GRANT	LAWRENCE, A.	90089801	NEW	78/09/01	$16,700
CALIFORNIA, UNIV. OF DAVIS	GRADUATE TRAINING IN ENVIRONMENT ENGINEERING	KRONE, R.	90091201	NEW	78/09/14	$22,550
GOVERNMENTAL REFUSE COL & DISP ASSOC SAN LEANDRO	GRCDA TECHNICAL ASST. AND TRAINING PROG. FOR RCRA	LAWRENCE, R.	90083601	NEW	78/07/07	$15,000
SOUTHERN CALIFORNIA, UNIV. OF LOS ANGELES	DISSEMINATION OF APEX II	MCGINTY, R.	90070601	INCR	78/09/22	$331
SOUTHERN CALIFORNIA, UNIV. OF LOS ANGELES	ENVIRONMENTAL MANAGEMENT INSTITUTE	BARBARO, G.	90090001	NEW	78/09/28	$120,000
STANFORD UNIVERSITY STANFORD	ENVIRONMENTAL AND WATER QUALITY MANAGEMENT	MCCARTY, P.	90088001	NEW	78/08/08	$27,350
** FELLOWSHIPS **						
CALIFORNIA ST. UNIV. DOMINGUEZ HILL	ENVIRONMENTAL STUDIES	COLSTON, E.	91117701	NEW	78/06/12	$1,515

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		C A L I F O R N I A				
** FELLOWSHIPS **						
CALIFORNIA STATE COLLEGE DOMINGUEZ HILLS	MS OF SCIENCE	MADLOCK, R.	91116001	NEW	78/07/17	$3,710
GOLDEN GATE UNIV. SAN FRANCISCO	M.S./PUBLIC ADMIN.	CHIU, A.	91103301	INCR	78/09/11	$1,557
LOYOLA MARYMOUNT UNIV. LOS ANGELES	ENGINEERING	SCHAFFER, T.	91130501	NEW	78/07/20	$1,985
SACRAMENTO CITY COLLEGE SACRAMENTO		DELANEY, K.	91130401	NEW	78/07/26	$6,000
SAN BERNARDINO VALLEY COLL. SAN BERNARDINO	A.S./WATER SUPPLY	ARMAS, D.	91115101	INCR	78/08/17	$1,743
SAN FRANCISCO ST. UNIV. SAN FRANCISCO	CHEMISTRY	YEE, NANCY	91120901	NEW	78/06/01	$2,920
SANTA CLARA, UNIV. OF SAN FRANCISCO	CHEMICAL ENGINEERING	FLYNN, E.	91119101	NEW	78/09/18	$5,848
SOUTHERN CALIFORNIA, UNIV OF LOS ANGELES	PUBLIC POLICY & COMM.	SCHWAB, C.	91120501	NEW	78/07/13	$2,384
SOUTHERN CALIFORNIA, UNIV. OF LOS ANGELES	ENGR./PART TIME AGENCY	CHOI, B. J.	91113801	INCR	78/09/15	$3,280

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		C A L I F O R N I A				
** FELLOWSHIPS **						
SOUTHERN CALIFORNIA, UNIV. OF LOS ANGELES	PUBLIC ADMINISTRATION	CAUGHEY, B.	91129401	NEW	78/07/21	$3,383
WESTERN STATE UNIV. FULLERTON	LAW	YOSHIDA, G.	91113501	INCR	78/09/07	$4,871

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		C O L O R A D O				
** RESEARCH **						
AMERICAN WATER WORKS ASSOC. RES. FDN. DENVER	REMOVAL OF TRACE ORGANICS FROM WATER USING ACTIVATED CARBON & POLYMERIC ADSORBENTS	TARAS, MICHAEL J.	80443501	INCR	78/09/11	$25,871
AMERICAN WATER WORKS ASSOC. RES. FDN. DENVER	MUNICIPAL WASTEWATER REUSE TECHNOLOGY TRANSFER	SPITZER, E.	80577501	NEW	78/04/28	$32,000
BOULDER, CITY OF BOULDER	EVALUATION OF HIGH RATE INFILTRATION PERCOLATION BIOS TO IMPROVE WATER QUALITY	SMITH, D.	80393102	INCR	78/08/09	$22,856
COLORADO SCH. OF MINES RES. INST. GOLDEN	MINERALOGY OF OVERBURDEN RELATED TO GROUND-WATER DEGRADATION IN STRIP MINING OF COAL	KLOEPPER, DEAN L.	80416201	INCR	78/08/29	$179,200
COLORADO SCHOOL OF MINES GOLDEN	SUMMER FIELD SYMPOSIUM ON WESTERN ENERGY OPPORTUNITIES, PROBLEMS & POLICY ISSUES	WELLES, J.	80614501	NEW	78/07/10	$9,000
COLORADO ST. UNIV. FORT COLLINS	INTERACTIONS OF METAL IONS WITH ORGANIC LIGANDS IN NATURAL WATERS	NATUSCH, D.	80518302	CONT	78/04/24	$63,723
COLORADO ST. UNIV. FORT COLLINS	EFFECTS OF CONTROLLED SULFUR DIOXIDE FUMIGATION ON PRIMARY PRODUCER AND INVERTEBRATE CONSUMER IN A	DODD, J.	80532002	CONT	78/06/22	$165,706
COLORADO STATE UNIV. FORT COLLINS	IRRIGATION RETURN FLOW QUALITY LITERATURE ABSTRACTING	SKOGERBOE, G.	80042607	CONT	78/08/16	$26,902
COLORADO STATE UNIV. FORT COLLINS	WATER QUALITY HYDROLOGY AFFECTED BY OIL SHALE DEVELOPMENT	MCWHORTER, D.	80368403	CONT	78/06/19	$15,933
COLORADO STATE UNIV. FORT COLLINS	TOXIC EFFECTS ON THE AQUATIC BIOTA FROM COAL & OIL SHALE DEV.	THURSTON, ROBERT V.	80395003	INCR	78/04/11	$33,061

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		C O L O R A D O				
** RESEARCH **						
			80395003	INCR	78/07/25	$74,994
COLORADO STATE UNIV. FORT COLLINS	VEGETATIVE STABILIZATION OF SPENT OIL SHALES	BERG, W.	80471902	CONT	78/06/19	$44,000
COLORADO STATE UNIV. FORT COLLINS	A NUMERICAL INVESTIGATION ON THE ROLE OF VARIOUS HALOCARBON CHEMICAL REACTANTS ON STRATOSPHERIC AND	CRUTZEN, P.	80492103	CONT	78/09/01	$54,820
COLORADO STATE UNIV. FORT COLLINS	LONG-RANGE TRANSPORT & TRANSFORMATION OF SULFUR DIOXIDE & SULFATE	RETIER, E.	80527102	CONT	78/04/20	$60,000
COLORADO STATE UNIV. FORT COLLINS	SOIL FILTRATION OF SEWAGE EFFLUENT OF A RURAL AREA	SABEY, B.	80540102	CONT	78/04/12	$40,418
COLORADO STATE UNIV. FT. COLLINS	EFFECTIVENESS VEGETATION BUFFER STRIPS CONTROLLING SEDIMENT & OTHER POLLUTANTS DISTURBED WATERSHEDS	SIMONS, D.	80545701	INCR	78/08/07	$35,945
COLORADO STATE UNIV. FORT COLLINS	METHODOLOGY DEVELOPMENT FOR SITING POWER PLANTS	DODD, J.	80601601	NEW	78/06/27	$76,852
COLORADO STATE UNIV. FORT COLLINS	CHEMICAL AND BIOLOGICAL CHARACTERIZATION OF OIL SHALE PROCESSING & COAL CONVERSION EFFLUENTS	SKOGERBOE, R.	80605101	NEW	78/07/20	$156,520
COLORADO STATE UNIV. FORT COLLINS	APPLICATION OF MULTIPLE WAVELENGTH SPECTROSCOPY TO METABOLIC STUDIES AND MULTI-ELEMENTAL WATER ANALY	O'KEEFE, K.	80609401	NEW	78/08/04	$39,893
COLORADO STATE UNIV. FORT COLLINS	MOVEMENT AND EFFECTS OF COMBINED SEWER OVERFLOW SEDIMENTS IN RECEIVING WATERS	KLEMETSON, S.	80611101	NEW	78/08/09	$75,150

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		C O L O R A D O				
** RESEARCH **						
COLORADO STATE UNIV. FORT COLLINS	OPTIMIZING SALINITY CONTROL STRATEGIES FOR THE UPPER COLORADO RIVER BASIN	WALKER, W.	80614801	NEW	78/08/11	$48,145
COLORADO STATE UNIV. FORT COLLINS	LEACHING CHARACTERISTICS OF RAW SURFACE STORED OIL SHALE	MCWHORTER, D.	80627801	NEW	78/08/18	$38,739
COLORADO STATE UNIV. FORT COLLINS	PLANNING MODEL FOR SELECTION OF BEST MANAGEMENT PRACTICE	SIMONS, D.	80630501	NEW	78/08/16	$150,000
COLORADO, UNIV. OF BOULDER	EFFECTS OF OZONATION ON ORGANICS IN WASTEWATER	CHAPPELL, W.	80447202	CONT	78/04/10	$67,903
COLORADO, UNIV. OF DENVER	CRITICAL REV. & EVAL. OF RES. ON THE IMPACT OF ENERGY-RELATED	CHAPELL, W.	80592101	NEW	78/05/26	$49,896
DENVER, UNIV. OF DENVER	INVESTIGATION OF ENZYMATIC SCREENING TESTS FOR MUTAGENS IN ENVRN. POLLUTANTS	SCHMIDT-COLLERUS, J.	80567101	INCR	78/08/23	$20,046
DENVER, UNIV. OF DENVER	TRANSFER AND UTILIZATION OF PARTICULATE CONTROL TECHNOLOGY	VENDITTI, F.	80572501	INCR	78/09/28	$14,985
DENVER, UNIV. OF DENVER	TRANSFER & UTILIZATION OF PARTICULATE CONTROL TECHNOLOGY	VENDITTI, F.	80572502	CONT	78/08/01	$54,247
DENVER, UNIV. OF DENVER	INVESTIGATIONS OF POINT & NON-POINT SOURCE EMISSIONS THROUGH CONTROLLED AIRBORNED SAMPLING	ARMSTRONG, J.	80592601	NEW	78/07/25	$95,962
DENVER, UNIV. OF DENVER	OPERATING CHARACTERISTICS OF ELECTROSTATIC PRECIPITATORS AT ELEVATED TEMPERATURE & HIGH PRESSURE	RINARD, G.	80593901	NEW	78/05/26	$179,858
DENVER, UNIV. OF DENVER	TRANSFER & UTILIZATION OF PARTICULATE CONTROL TECHNOLOGY	VENDITTI, F.	80572502	INCR	78/08/22	$14,985

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		C O L O R A D O				
** RESEARCH **						
DENVER, UNIV. OF DENVER	OIL SHALE SYMPOSIUM: SAMPLING, ANALYSIS AND QUALITY ASSURANCE	PRESSEY, R.	80615601	NEW	78/06/27	$65,000
DENVER, UNIV. OF DENVER	EVALUATION OF NOVEL ELECTROSTATIC PRECIPITATOR SYSTEMS USING A TRANSPORTABLE PROTOTYPE	RINARD, G.	80622201	NEW	78/09/22	$1,816,560
WRIGHT-INGRAHAM INST. COLORADO SPRINGS	PEST CONTROL STRATEGIES FOR THE FUTURE	DE JONG, P.	80594401	NEW	78/06/19	$6,420
** TRAINING **						
COLORADO ST. UNIV. FORT COLLINS	WATER QUALITY MICROBIOLOGY AND ENGINEERING	MORRISON, S.	90085401	NEW	78/07/20	$19,300
COLORADO ST. UNIV. FORT COLLINS	NATIONAL CENTER FOR VEHICLE EMISSIONS CONTROL	MANESS, M.	90088501	NEW	78/08/01	$124,275
			90088501	INCR	78/09/28	$111,495
COLORADO STATE UNIV. FORT COLLINS	NATIONAL CENTER FOR MOTOR VEHICLE EMISSIONS CONTROL TRAINING	MANESS, M.	90071801	INCR	78/05/01	$39,073
NATIONAL CONFERENCE STATE LEGISLATORS DENVER	STATE LEGISLATIVE IMPLEMENTATION OF SECTION 208	KURTZ, K.	90065801	INCR	78/05/24	$16,395
** FELLOWSHIPS **						
COLORADO ST. UNIV. FORT COLLINS	MATHEMATICS	PIATT, J.	91119901	NEW	78/07/17	$4,941

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		C O N N E C T I C U T				
** RESEARCH **						
CONNECTICUT, UNIV. OF STORRS	GENETIC VARIATION AND RESISTANCE TO CARCINOGENS IN NATURAL WATERS	SCHULTZ, J.	80519502	CONT	78/06/27	$51,128
SEABOARD METAL FINISHING CO., INC. WEST HAVEN	DIALYSIS PURIFICATION OF METAL FINISHING RINSE WATER	WHEELER, C.R.	80465501	INCR	78/09/13	$22,455
SIAM INST. FOR MATH & SOCIETY NEW CANAAN	STATISTICS & ENVIRONMENTAL HEALTH	THOMSEN, D.	80493203	CONT	78/08/16	$80,000
** DEMONSTRATION **						
ENFIELD, TOWN OF ENFIELD	LEACHATE TREATMENT BY ANAEROBIC FILTER	MULLINS, R.	80362701	INCR	78/04/26	$25,000
			80362701	INCR	78/09/20	$50,000
HAFNER INDUSTRIES, INC. NEW HAVEN	PILOT PLANT DEMONSTRATION & EVALUATION OF PVC WASTES RECLAIMED BY HAFNER PROCESS	HAFNER, EDWIN A.	80469301	INCR	78/08/16	$65,000
SEABOARD METAL FINISHING CO., INC. WEST HAVEN	TREATMENT OF WASTEWATER FROM CHROMIUM PLATING LINES	WHEELER, C.	80576001	NEW	78/05/26	$37,506
** TRAINING **						
TROUT UNLIMITED, CONN. COUNCIL MIDDLEBURY	STATEWIDE PUBLIC PARTICIPATION IN WATER QUALITY MANAGEMENT IN CONNECTICUT	KINGSNORTH, N.	90081401	NEW	78/06/22	$7,000
** FELLOWSHIPS **						
CONNECTICUT, UNIV. OF STORRS	BIOLOGICAL SCIENCES	CURTIS, M.	91125801	NEW	78/06/27	$3,640

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		CONNECTICUT				
** FELLOWSHIPS **						
HARTFORD GRADUATE CTR. HARTFORD	MANAGEMENT SCIENCE	PEPLAU, S.	91119801	NEW	78/06/28	$6,010
YALE UNIV. NEW HAVEN	ENVIRONMENTAL STUDIES	VON LINDERN, I.	91119701	NEW	78/07/17	$11,980

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		D E L A W A R E				
** RESEARCH **						
DELAWARE STATE COLLEGE DOVER	AN ENVIRONMENTAL HEALTH STUDY OF LEAD IN TEETH	WILKINSON, DONALD R.	80289002	INCR	78/09/06	$6,600
DELAWARE, UNIV. OF NEWARK	DEVELOPMENT OF AN ACTIVATED CARBON PROCESS FOR THE REMOVAL OF CADMIUM	HUANG, C.	80583501	NEW	78/08/21	$50,000
** DEMONSTRATION **						
E.I. DUPONT DE NEMOURS & CO.,INC. WILM.	CHAMBERS WORKS WASTEWATER TREATMENT PLANT - REMOVAL OF ORGANIC & ORGANO-NITROGEN COMPOUNDS FROM WAST	HEATH, H.	80494303	CONT	78/04/20	$99,000
** FELLOWSHIPS **						
CENTRAL MICHIGAN UNIV. DOVER AFB		BEAMAN, J.	91126601	NEW	78/08/04	$6,000
DELAWARE, UNIV. OF NEWARK	BIOLOGY	JOYCE, MARTIN	91126801	NEW	78/08/18	$2,780

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		DISTRICT OF COLUMBIA				
** RESEARCH **						
AMERICAN PETROLEUM INST. WASHINGTON	INVESTIGATION OF THE EFFECTIVENESS OF SURFACE-ACTIVE AGENTS IN COMBATING OPEN-OCEAN OIL SPILLS	GOULD, J.	80605601	NEW	78/09/07	$75,606
AMERICAN UNIV. WASHINGTON	DISTRIBUTION OF SUBMERGED VASCULAR PLANTS IN CHESAPEAKE BAY MARYLAND	ANDERSON, R.	80597701	NEW	78/05/19	$137,397
ANALYTIC CHEMISTS, ASSOC OF WASHINGTON	SYMPOSIUM ON PRESENT STATUS AND GOALS OF COLLABORATIVE STUDIES IN TOXICOLOGY	BERUZA, M.	80647101	NEW	78/09/29	$20,677
D.C. RESOURCES FOR THE FUTURE WASHINGTON	RESOURCE AND ENVIRONMENTAL PROBLEMS OF AGRICULTURE IN THE UNITED STATES	CROSSON, P.	80623601	NEW	78/08/14	$185,000
ENVIRONMENTAL LAW INST. WASHINGTON	ANALYSIS OF SCRAP MATERIAL SUPPLY AND DEMAND	ANDERSON, R.	80579901	INCR	78/05/10	$3,507
ENVIRONMENTAL LAW INSTITUTE WASHINGTON	AN ANALYSIS OF SCRAP FUTURES MARKETS FOR STIMULATING RESOURCE RECOVERY	ANDERSON, ROBERT C.	80430901	INCR	78/09/20	$29,007
ENVIRONMENTAL LAW INSTITUTE WASHINGTON	AN ECONOMIC ASSESSMENT OF GOVERNMENTAL RISK MGMT. POLICIES	ANDERSON, R.	80592001	NEW	78/07/03	$99,964
HOWARD UNIV. WASHINGTON	GENETIC & CELLULAR EFFECTS OF MICROWAVE RADIATION	DUTTA, S.	80356103	INCR	78/05/17	$55,000
HOWARD UNIV. WASHINGTON	DETECTION & CAUSATION SOURCES OF CHLOROFORM IN RURAL WATER SUPPLIES	VARMA, M.	80568901	NEW	78/07/25	$43,628
HOWARD UNIV. WASHINGTON	A STUDY OF PEROXIDASE ISOENZYMES IN CALLUS TISSUES FROM OZONE RESISTANT AND OZONE/SENSITIVE PLANTS	RIER, J., JR.	80600401	NEW	78/07/14	$89,417

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		DISTRICT OF COLUMBIA				
** RESEARCH **						
INTERNATIONAL CITY MGMT. ASSOC., INC. WASHINGTON	DESIGN OF EPA SURVEYS	STEVENSON LISA	80644601	NEW	78/09/28	$32,729
NATIONAL ACADEMY OF SCIENCE WASHINGTON	ACADEMY FORUM ON THE DEVELOPMENT OF OCEAN RESOURCES	WHITE, R.	80611501	NEW	78/07/14	$25,000
NATIONAL CENTER FOR RESOURCE RECOVERY WASHINGTON	PREPARATION, USE & COST OF D-RDF AS A SUPPLEMENTARY FUEL IN STOKE FIRED BOILERS	ALTER, HARVEY	80415001	INCR	78/06/21	$36,000
NINTH INTNATL CONGRESS OF PLANT PROT WASHINGTON	PLANNING & CONDUCTING THE IX INTERNATIONAL CONGRESS OF PLANT PROTECTION	TWEEDY, B.	80541701	INCR	78/07/10	$10,000
OFFICIAL ANALY. CHEM. ASSOC. OF WASHINGTON	VALIDATION OF ANALYTICAL METHODOLOGY FOR IMPLEMENTATION	BEROZA, M	80582901	NEW	78/08/11	$17,500
OFFICIAL ANALY. CHEM., ASSOC. OF WASHINGTON	EPA REGULATIONS ON PESTICIDE MATERIALS & FORMULATIONS	BEROZA, M.	80576401	NEW	78/06/07	$20,000
PUBLIC TECHNOLOGY, INC. WASHINGTON	STATUS OF OZONATION & CHLORINE DIOXIDE TECHNOLOGIES FOR TREATMENT OF MUNICIPAL WATER SUPPLIES	MILLER, G. WADE	80436501	INCR	78/05/31	$9,955
PUBLIC TECHNOLOGY, INC. WASHINGTON	CONDUCTING A FEASIBILITY STUDY ON ESTABLISHING A U.S. INSTRUMENTATION & AUTOMATION TESTING & CERTIFI	HOUCK, D.	80593701	NEW	78/08/16	$40,772
RACHEL CARSON TRUST WASHINGTON	CONSERVATION ETHIC IN PHILOSOPHY AND RELIGION; AN ANNOTATED BIBLIOGRAPHY	ANGLEMYER, M.	80615401	NEW	78/09/14	$5,000
** DEMONSTRATION **						
INSTITUTE OF INDUSTRIAL LAUNDERERS WASHINGTON	DEMONSTRATION OF ULTRAFILTRATION&CARBON ADSORPTION FOR TREATMENT OF INDUSTRIAL LAUNDERING WASTEWATER	HUMPHREY, C.	80436701	INCR	78/05/04	$6,180

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		DISTRICT OF COLUMBIA				
** TRAINING **						
AMERICAN INST. FOR RES., ED., & TR. WASHINGTON	SOLID WASTE MGMT. PROJ.	FLETCHER, J.	90078901	NEW	78/04/24	$62,875
AMERICAN PUBLIC HEALTH ASSOC. WASHINGTON	RESOURCE CONSERVATION & RECOVERY ACT OF 1976 FOR HEALTH & ENV. PERSONNEL	BRODBECK, S.	90076801	INCR	78/09/28	$9,479
AMERICAN PUBLIC WORKS ASSOC. WASHINGTON	INCREASED SOLID WASTE MGMT. SERV. TO STATE & LOCAL AGENCIES	DUNN, J.	90068202	CONT	78/04/28	$50,415
			90068202	INCR	78/09/22	$40,000
BROOKINGS INSTITUTION WASHINGTON	SEMINAR ON CONSERVATION AND NATURAL RESOURCES	PATTERSON, B.	90087601	NEW	78/09/20	$45,191
CLEAN WATER FUND WASHINGTON	SHOPPING FOR SEWAGE TREATMENT	SOPHIE ANN AOKI	90080901	NEW	78/04/12	$5,000
CLEAN WATER FUND WASHINGTON	NATIONAL CONFERENCE ON WATER CONSERVATION & MUNICIPAL WASTEWATER FLOW REDUCTION	AOKI, S.	90091401	NEW	78/09/18	$24,517
CONSERVATION FDN WASHINGTON	CONSTRUCTING MUN. SEWAGE TREATMENT FACILITIES	RASTATTER, C.	90070501	INCR	78/04/05	$38,275
			90070501	INCR	78/08/16	$133,074
CONSERVATION FDN. WASHINGTON	TRAINING CONFERENCES FOR THE OFFICE OF TOXIC SUBSTANCE	DAVIES,J.C.	90062902	INCR	78/06/28	$9,820
U. S. CONFERENCE OF MAYORS WASHINGTON	AN INTERAGENCY PROJECT ON URBAN & METROPOLITAN DEVELOPMENT COORDINATION WITH AIR QUALITY REQUIREMENTS	MISTER, MELVIN A.	90088201	NEW	78/09/22	$269,375

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		D I S T R I C T O F C O L U M B I A				
** TRAINING **						
ENVRN. ACTION FDN. WASHINGTON	CITIZEN ASSISTANCE TO STATE IMPLEMENTATION OF RCRA	MUNSON, R.	90072101	INCR	78/09/28	$9,819
METRO SEWERAGE AGENCIES, ASSOC OF WASHINGTON	PROFESSIONAL TRAINING OF MUNICIPAL TREATMENT AGENCY DIRECTORS IN 208 PLANNING & IMPLEMENTATION	LINTON,R.	90070701	INCR	78/07/24	$4,940
NATIONAL ASSOC. OF CONSR. DIST. WASHINGTON	EDUCATION & TECHNICAL TRANSFER FOR IMPLEMENTING NPS PHASE OF 208 (208 NPS IMPLEMENTATION PROJECT)	WILLIAMS, R.	90074402	CONT	78/09/13	$147,174
NATIONAL ASSOC. OF COUNTIES WASHINGTON	PROPOSAL TO ASSIST WITH IMPLEMENTATION OF CLEAN AIR ACT AMENDMENTS OF 1977	WEAVER, R.	90075701	INCR	78/04/10	$126,936
			90075701	INCR	78/09/15	$23,346
NATIONAL ASSOC. OF COUNTIES RES. FDN. WASHINGTON	TECHNICAL ASSISTANCE FOR COUNTIES IN SOLID WASTE MANAGEMENT	COBB, C.	90065701	INCR	78/04/10	$56,336
NATIONAL ASSOC. OF REGIONAL COUNCILS WASHINGTON	IMPLEMENTATION OF THE CLEAN AIR ACT	WEBSTER, R.	90076301	INCR	78/07/31	$3,000
NATIONAL GOVERNORS CONFERENCE WASHINGTON	STATE INITIATIVES TOWARD IMPLEMENTATION OF THE RESOURCE CONSERVATION AND RECOVERY ACT OF 1976	HELMINSKI, E.	90068601	INCR	78/07/24	$10,800
NATIONAL GOVERNORS ASSOC. WASHINGTON	STATE INITIATIVES TOWARD IMPLEMENTATION OF THE RESOURCE CONSERVATION AND RECOVERY ACT OF 1976, P.L.	GRASSO, R.	90068602	CONT	78/08/14	$142,649
NATIONAL NEWSPAPER PUB ASSOC INC WASHINGTON	ENVIRONMENTAL INFORMATION SEMINAR	BRISCOE, S.	90084301	NEW	78/05/05	$9,660

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
	D I S T R [illegible] A					
** TRAINING **						
NATIONAL WILDLIFE WASHINGTON	PUBL. [illegible] ANCES CONTROL		90090501	NEW	78/09/19	$39,527
NATIONAL WILDLIFE FEDER. WASHINGTON	RCRA STATE PUBLIC EDUCATION FORUMS	[illegible], K.	90077301	INCR	78/05/24	$10,000
NATURAL RES. DEFENSE COUNCIL, INC. WASHINGTON	PROJECT ON TOXIC POLLUTANT REGULATION	BANKS, J.	90092101	NEW	78/09/15	$127,613
RURAL AMERICAN WOMEN, INC. WASHINGTON	RURAL AMERICAN WOMEN LEADERSHIP CONF.	ABERNATHY, E.	90079301	NEW	78/05/17	$5,000
SOLAR ACTION WASHINGTON	PUBLIC SERV. ANNOUNCEMENTS FOR SUN DAY	FREEMAN, A.	90079401	NEW	78/05/02	$5,000
URBAN ENV. CONFERENCE WASHINGTON	REGIONAL WORKSHOPS TO INC REASE PUBLIC PARTICIPATION OF LABOR MINORITY AND ENVIRONMENTAL ORGANIZATIO	COLING, G.	90082301	NEW	78/07/25	$75,000
URBAN SCIENTIFIC & EDUCATIONAL RES. WASHINGTON	WASTEWATER REDUCTION TRAINING PROGRAM	SPENCER, K.	90069201	NEW	78/09/27	$47,436
CITIZENS PROGRAM FOR CHESAPEAKE BAY, INC. WASHINGTON	TO PROVIDE TRAINING OF GRADUATE STUDENTS IN WATER POLLUTION CONTROL AND WATER SUPPLY-TO PROVIDE INDI	HAGERMAN, G.	90087901	NEW	78/09/20	$253,730
** FELLOWSHIPS **						
AMERICAN UNIV. WASHINGTON	M.S./TECH. MGMT./PART TIME AGENCY	DAVIDSON, M. F.	91112401	INCR	78/09/18	$1,612
AMERICAN UNIV. WASHINGTON	PH.D./WATER QUALITY	BOSTATER, C.	91114601	INCR	78/08/01	$2,526

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
	DISTRICT OF COLUMBIA					
** FELLOWSHIPS **						
GEORGE WASHINGTON UNIV. WASHINGTON	WATER SUPPLY-PART TIME AGENCY	SCHAFFER, C.	91112001	INCR	78/07/17	$2,526

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		F L O R I D A				
** RESEARCH **						
AMERICAN ELECTROPLATERS' SOCIETY, INC. WINTER PARK	EFFECT OF ANIONS ON THE PRECIPITATION OF HEAVY METAL IONS FROM ELECTROPLATING WASTE WATERS PHASE I	SCHUMACHER, J. H.	80624701	NEW	78/08/17	$9,213
DADE CNTY. DEPT. PUB. HLTH. MIAMI	REMOVING ORGANIC SUBSTANCES WHICH ARE POTENTIAL CARCINOGENS EITHER ORIGINALLY PRESENT IN GROUND WATE	MORGAN, R.	80605201	NEW	78/08/29	$100,000
FLORIDA ST. UNIV. TALLAHASSEE	EFFECTS OF DRILLING MUD ON MARINE ORGANISMS	GLASSEN, R.	80613001	NEW	78/07/31	$25,000
			80613001	INCR	78/08/21	$5,000
FLORIDA ST. UNIV. TALLAHASSEE	EFFECTS OF DRILLING MUD CONSTITUENTS ON THE SEDIMENTARY MICROFLORA AND BASE OF THE MARINE BENTHIC	WHITE, D.	80614301	NEW	78/07/19	$40,919
FLORIDA ST. UNIV. TALLAHASSEE	BERYLLIUM AND RELATED METAL AEROSOL ANALYSES FOR INDUSTRIAL SOURCES	NELSON, W.	80616201	NEW	78/08/31	$45,000
FLORIDA ST. UNIV. TALLAHASSEE	NEGATIVE ION SCREENING FOR MARINE XENOBIOTIC CHEMICALS	DOUGHERTY, R.	80653401	NEW	78/08/31	$35,000
FLORIDA STATE OFFICE OF HEALTH TAMPA	MONITORING FOR PATHOGENIC NAEGLERIA	WELLINGS, F.	80437502	INCR	78/07/21	$9,867
FLORIDA STATE UNIV. TALLAHASSEE	MESOSCALE SULFUR BALANCE STUDIES	WINCHESTER, J.	80388703	CONT	78/04/27	$100,000
FLORIDA TECH. UNIV. ORLANDO	WATER MANAGEMENT TO IMPROVE LAKE WATER QUALITY	WANIELISTA, M.	80558001	NEW	78/07/25	$76,545

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		F L O R I D A				
** RESEARCH **						
FLORIDA TECH, UNIV. ORLANDO	RESEARCH SYMPOSIUM ON SOLID & HAZARDOUS WASTE MGMT.	NEWELL, R.	80619801	NEW	78/07/13	$34,648
FLORIDA, UNIV. OF GAINESVILLE	SEWAGE SLUDGE VIRAL AND PATHOGENIC AGENTS IN SOIL-PLANT-ANIMAL SYSTEMS	DAVIDSON, J.	80457003	CONT	78/08/14	$200,000
FLORIDA, UNIV. OF GAINESVILLE	CHEMICAL CONTROL OF WATER QUALITY IN DISTRIBUTION SYSTEM	SINGLEY, J. E.	80540002	CONT	78/08/31	$81,541
FLORIDA, UNIV. OF GAINESVILLE	RELATIONSHIP BETWEEN BLACK MANGROVE FOREST MID ESTUARINE WATERS	LUGO, A.	80542401	INCR	78/07/14	$9,500
FLORIDA, UNIV. OF GAINESVILLE	ECOLOGICAL IMPACT OF INTEGRATED CHEMICAL AND BIOLOGICAL AQUATIC WEED CONTROL	SHIREMAN, J.	80549701	NEW	78/06/29	$174,999
FLORIDA, UNIV. OF GAINESVILLE	RETENTION AND TRANSFORMATIONS OF PHOSPHORUS AND SELECTED PESTICIDES IN SOILS & SEDIMENTS	RAO, P.	80552902	CONT	78/08/09	$147,343
FLORIDA, UNIV. OF GAINESVILLE	LOADING RATES & ECOLOGICAL SIGNIFICANCE OF NUTRIENTS IN ATMOS. PRECIPITATION	BREZONIK, P.	80556002	CONT	78/09/20	$50,252
FLORIDA, UNIV. OF GAINESVILLE	WATER IMPACTS FROM URBAN STORMWATER POLLUTION	HUBER, W.	80566301	NEW	78/05/24	$75,000
FLORIDA, UNIV. OF GAINESVILLE	URBAN STORMWATER QUALITY MANAGEMENT ALTERNATIVES	HEANEY, J.	80566401	NEW	78/06/15	$50,000
FLORIDA, UNIV. OF GAINESVILLE	IN-STACK DIFFUSION CLASSIFIER FOR AEROSOL MASS DISTRIBUTION	LUNDGREN, D.	80576201	NEW	78/05/31	$34,000

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APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		F L O R I D A				
** RESEARCH **						
			80576201	INCR	78/08/21	$40,000
FLORIDA, UNIV. OF GAINESVILLE	ENERGY MODEL AND ANALYSIS OF A CADMIUM STREAM WITH A STUDY CORRELATING EMBODIED ENERGY AND TOXICITY	ODUM, H.	80608001	NEW	78/08/09	$22,470
MIAMI, UNIV. OF CORAL GABLES	MAN'S EXPOSURE TO HALOGENATED ORGANICS FROM HIS DRINKING WATER	ENOS, HENRY	80461102	INCR	78/08/01	$4,356
MIAMI, UNIV. OF CORAL GABLES	MAN'S EXPOSURE TO HALOGENATED ORGANICS FROM HIS DRINKING WATER	ENOS, H.	80461103	CONT	78/08/14	$207,110
MIAMI, UNIV. OF MIAMI	SOUTHEAST FLORIDA OCEAN OUTFALL STUDY	SNEDAKER, S. C.	80474901	INCR	78/07/13	$75,000
MIAMI, UNIV. OF CORAL GABLES	INACTIVATION ON NATURALLY OCCURRING ENTEROVIRUSES	BEASLEY, ANNIE	80478002	INCR	78/07/25	$960
MIAMI, UNIV. OF CORAL GABLES	PESTICIDE EFFECTS ON PRENATAL CARDIOVASCULAR PHYSIOLOGY	GRABOWSKI, C.	80530102	CONT	78/06/15	$29,000
MIAMI, UNIV. OF MIAMI	SOUTHEAST FLORIDA OCEAN OUTFALL STUDY	SNEDAKER, S.	80630701	NEW	78/09/20	$205,178
SOUTH FLORIDA, UNIV. OF TAMPA	INSTRUMENTATION DEVELOPMENT FOR REDUCED FORMS OF SULFUR IN AIR	BRAMAN, R.	80609901	NEW	78/08/04	$15,000
WEST FLORIDA, UNIV. OF PENSACOLA	CYCLING OF XENOBIOTICS THROUGH ESTUARINE AND MARINE SEDIMENTS	D'ASARO, CHARLES	80445802	INCR	78/08/09	$99,849

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		F L O R I D A				
** RESEARCH **						
WEST FLORIDA, UNIV. OF PENSACOLA	TOXIC, SUBLETHAL & LATENT EFFECTS OF SELECTED PETROLEUM HYDROCARBONS & BARIUM SULFATE ON MARINE ORGA	RANGA RAO, K.	80454102	CONT	78/05/26	$46,957
WEST FLORIDA, UNIV. OF PENSACOLA	WATER QUALITY AND EUTROPHICATION STUDIES IN SANTA ROSA SOUND IN THE PROXIMITY OF ESCAMBIA AND SANTA	MOSHIRI, G.	80536602	CONT	78/08/31	$32,220
WEST FLORIDA, UNIV. OF PENSACOLA	SEPARATION OF COMPOUNDS WITH ANTI-CARCINOGENIC PROPERTIES FROM MARINE INVERTEBRATES	CHANG, C.	80610801	NEW	78/08/23	$40,529
WEST FLORIDA, UNIV. OF PENSACOLA	BEHAVIORAL ASSAYS FOR THE EFFECTS OF DRILLING MUD ON MARINE ANIMALS	HAMILTON, P.	80612101	NEW	78/06/21	$22,492
WEST FLORIDA, UNIV. OF PENSACOLA	INVESTIGATION OF CHEMICAL MUTAGEN ACCUMULATION IN THE TISSUES OF MARINE ORGANISMS	BAYLIS, J.	80633901	NEW	78/08/22	$36,220
** DEMONSTRATION **						
REEDY CREEK IMPROVEMENT DIST. LAKE BUENA VISTA	WATER HYACINTH WASTEWATER TREATMENT SYSTEM	MOSES, T.	80565501	NEW	78/06/27	$246,000
** TRAINING **						
FLORIDA AUDUBON SOCIETY MAITLAND	A SYMPOSIUM ON ENVIRONMENTAL CARCINOGENESIS	SCOTT, HAL	90086901	NEW	78/09/19	$10,000
FLORIDA, UNIV. OF GAINESVILLE	GRADUATE TRAINING IN AIR POLLUTION	URONE, P.	90079901	NEW	78/07/21	$50,623
** FELLOWSHIPS **						
FLORIDA, UNIV. OF GAINESVILLE	ENVIRONMENTAL STUDIES	BESKID, C.	91122801	NEW	78/07/26	$10,545

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		F L O R I D A				
** FELLOWSHIPS **						
FLORIDA ST. UNIV. TALLAHASSEE	MS/ENV. SCI.	JOHNSTON, S.	91115901	NEW	78/06/28	$2,928
FLORIDA ST. UNIV. TALLAHASSEE	BIOLOGY	WILLIAMS, L.	91125501	NEW	78/07/19	$4,266
FLORIDA ST. UNIV. TALLAHASSEE	GOVERNMENT PUBLIC ADMINISTRATION ENVRN POLICY	MCGINNIS, H.	91130801	NEW	78/07/26	$2,792
FLORIDA, UNIV. OF GAINESVILLE	M.S./ENVRN. HEALTH	RUGGLES, A.	91104901	INCR	78/09/14	$100
FLORIDA, UNIV. OF GAINESVILLE	ENVIRONMENTAL ENGR	SHALLEY, C.	91116801	NEW	78/06/19	$5,242
FLORIDA, UNIV. OF GAINESVILLE	MECHANICAL ENGR	ROVELL-RIXX, D.	91117301	NEW	78/06/15	$8,142
FLORIDA, UNIV. OF GAINESVILLE	PRE-MED.	SCHERT, J.	91117401	NEW	78/06/15	$8,015
FLORIDA, UNIV. OF GAINESVILLE	MINERAL ENGINEERING	GOLSON, G.	91119301	NEW	78/08/21	$10,689
FLORIDA, UNIV. OF GAINESVILLE	ENVIRONMENTAL SCIENCE	KENNEY, M.	91120001	NEW	78/06/01	$8,142
FLORIDA, UNIV. OF GAINESVILLE	CIVIL ENGINEERING	PARSONS, M.	91124201	NEW	78/06/22	$6,000

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		G E O R G I A				
** RESEARCH **						
ATLANTA UNIV. CENTER ATLANTA	STUDIES ON THE MUTAGENICITY OF CHEMICAL CARCINOGENS	SHEEHY, R.	80420402	INCR	78/05/26	$77,595
EMORY UNIV. SCH. OF MED. ATLANTA	DOSES OF UV ON MAMMALIAN SKIN: SIMULATION OF DECREASING STRATOSPHERIC OZONE	WILLIS, I.	80639201	NEW	78/09/11	$42,500
GEORGIA INST. OF TECH. ATLANTA	CONTROLLED LANDFILL STABILIZATION WITH LEACHATE RECYCLE	POHLAND, F.	80395302	INCR	78/06/27	$5,000
GEORGIA INST. OF TECH. ATLANTA	MANAGEMENT OF LOWLEVEL RADIOACTIVE WASTE	CARTER, M.	80542501	NEW	78/04/03	$2,500
GEORGIA STATE UNIV. ATLANTA	EFFECTS OF POLLUTANTS ON MICROBIAL ACTIVITIES IN ESTUARINE SURFACE FILMS	AHEARN, D.	80447702	INCR	78/06/27	$10,000
GEORGIA, UNIV. OF ATHENS	ENVIRONMENTAL AND ECONOMICAL IMPACT OF PLACING SOIL BANK MARGINAL AND SUBMARGINAL LAND	BRANNEN, S. J.	80451001	INCR	78/08/09	$4,822
GEORGIA, UNIV. OF ATHENS	POTENTIAL IMPACT OF ACIDIFIED PRECIPITATION ON ELEMENT CYCLING AND PRODUCTION IN SOUTHERN APPALHIAN	MONK, C.	80530501	NEW	78/06/09	$32,500
GEORGIA, UNIV. OF ATHENS	MICROCOSM MATRIX AS A TEST SYSTEM FOR POLL. TOXIC SUBSTANCE	ODUM, E.	80586001	NEW	78/04/24	$63,203
GEORGIA, UNIV. OF ATHENS	ANALYSIS OF MATHEMATICAL MODELS FOR POLL. TRANSPORT & DISSIPATION	AMES, W.	80590201	NEW	78/07/19	$37,299
GEORGIA, UNIV. OF ATHENS	PERSISTENCE IN MODEL ECOSYSTEMS	GARD, THOMAS	80616101	NEW	78/08/16	$19,020

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		G E O R G I A				
** RESEARCH **						
MOREHOUSE COLLEGE ATLANTA	DEVELOPMENT OF AN IN VITRO MUTAGENESIS TEST SYSTEM	BENDER, J.	80597201	NEW	78/07/13	$48,142
** TRAINING **						
ATLANTA UNIVERSITY ATLANTA	UNDERGRADUATE TRAINING PROGRAM IN WATER POLLUTION CONTROL DESIGN ENGINEERING	MERIDETH, C.	90090801	NEW	78/09/18	$50,000
** FELLOWSHIPS **						
GEORGIA INST. OF TECH. ATLANTA	CIVIL ENGINEERING	PAULK, C.	91131101	NEW	78/08/14	$6,000

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		H A W A I I				
** FELLOWSHIPS **						
HAWAII, UNIV. OF HONOLULU	CIVIL ENGR	LAM, A.	91127101	NEW	78/07/10	$3,496

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		I D A H O				
** RESEARCH **						
IDAHO, UNIV. OF MOSCOW	FIELD STUDIES OF COOK INLET WETLANDS, ALASKA	RABE, F.	80587001	NEW	78/07/03	$55,000
IDAHO, UNIV. OF MOSCOW	SEDIMENTATION AND PRODUCTIVITY OF SALMONID STREAMS	BJORNN, T.	80619501	NEW	78/08/04	$60,010
** TRAINING **						
IDAHO SOIL CONSERVATION COMM. BOISE	STATEWIDE PUBLIC PARTICIPATION IN WATER QUALITY MANAGEMENT IN IDAHO	SCOTT, D.	90083101	NEW	78/06/22	$7,000

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APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		I L L I N O I S				
** RESEARCH **						
AMERICAN PUBLIC WORKS ASSOC. CHICAGO	EVALUATION & TECHNOLOGY TRANSFER OF THE SWIRL CONCENTRATOR PRINCIPLE	SULLIVAN, RICHARD H.	80315701	INCR	78/05/19	$22,000
AMERICAN SOCIETY OF ANIMAL SCIENCE CHAMPAIGN	SYMPOSIUM MANAGEMENT AND UTILIZATION OF ANIMAL WASTES	SUTTON, A.	80608901	NEW	78/05/17	$1,000
CHICAGO METRO. SAN. DIST. CHICAGO	ENVRN CHANGES AGRICULTURAL BENEFITS FROM USING MUN SEWAGE SLUDGE/CROP PRODUCTION/STRIP-MINED SOILS	BRAXTON, J. S.	80562901	INCR	78/08/16	$157,911
DEPAUL UNIV. CHICAGO	INPUT OF HAZARDOUS MATERIALS FROM THE ATMOSPHERE TO SAGINAW BAY	MURPHY, T.	80532501	INCR	78/08/10	$12,450
DEPAUL UNIV. CHICAGO	INPUTS OF HAZARDOUS MATERIALS FROM THE ATMOSPHERE TO SAGINAW BAY	MURPHY, T.	80532502	CONT	78/07/24	$42,500
IIT RESEARCH INST. CHICAGO	EFFECTS OF AIR POLLUTANTS ON RESISTANCE TO RESPIRATORY INFECTIONS	EHRLICH, R.	80579401	NEW	78/04/13	$90,013
			80579401	INCR	78/05/24	$9,969
IIT RESEARCH INST. CHICAGO	STUDY OF MICROBIAL AEROSOLS EMITTED FROM A WATER RECLAMATION PLANT	FANNIN, D.	80606201	NEW	78/06/29	$127,875
IIT RESEARCH INST. CHICAGO	CHEMICAL STABLIZERS FOR THE CONTROL OF FUGITIVE ASBESTOS EMISSIONS	ASE, PAUL	80626901	NEW	78/08/24	$180,000
IIT RESEARCH INST. CHICAGO	RESPIRATORY CARCINOGENICITY OF DIESEL FUEL EMISSIONS	GRUBBS, C.	80632601	NEW	78/09/22	$250,000

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		I L L I N O I S				
** RESEARCH **						
IIT RESEARCH INST. CHICAGO	ANIMAL HEALTH EFFECT STUDIES OF INHALED PARTICULATES	EHRLICH, R.	80632701	NEW	78/08/31	$45,000
IIT RESEARCH INST. CHICAGO	ATMOSPHERIC EMISSIONS & REACTANTS FROM SHALE OIL EXTRACTIONS	DRAFTZ, R.	80636601	NEW	78/09/06	$125,000
ILLINOIS INST. OF TECH. CHICAGO	SUSCEPTIBILITY OF METALS TO TREATMENT IN COMBINED INDUSTRIAL-MUNICIPAL SYSTEM	PATTERSON, J. W.	80453801	INCR	78/09/11	$50,160
ILLINOIS, UNIV. OF URBANA	EFFECT OF MOISTURE REGIME ON SOLID WASTE STABILIZATION	CHIAN, E. S. K.	80365202	INCR	78/07/25	$18,938
ILLINOIS, UNIV. OF URBANA	SAMPLING FREQUENCY FOR WATER QUALITY TRENDS	HARMESON, R.	80433702	CONT	78/05/04	$196,029
ILLINOIS, UNIV. OF URBANA	REACTION OF ACTIVATED CARBON WITH AQUEOUS CHLORINE AND OTHER DISINFECTING AGENTS	SNOEVINK, V.	80529302	CONT	78/07/24	$131,195
ILLINOIS, UNIV. OF CHICAGO	BIOSYNTHESIS OF N-NITROSO COMPOUNDS FROM TRACE LEVEL PRECURSORS IN LAB. ANIMALS	EPSTEIN, S.	80543102	CONT	78/04/10	$200,000
ILLINOIS, UNIV. OF CHICAGO	METHODOLOGIES FOR UTILIZATION OF ENV. IMPACT ASSESSMENT DATA	BABCOCK, L.	80547602	CONT	78/08/16	$68,412
ILLINOIS, UNIV. OF URBANA	OHIO RIVER BASIN ENERGY STUDY: PHASE II: EXPERIMENTAL MANAGEMENT PLAN	STUKEL, J.	80558801	INCR	78/06/15	$300,000
			80558801	INCR	78/09/20	$350,000

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		I L L I N O I S				
** RESEARCH **						
ILLINOIS, UNIV. OF URBANA	RESEARCH FOR MEASUREMENT & CONTROL OF WIND BLOWN DUST FROM STORAGE PILES	SOO, S.	80596901	NEW	78/06/28	$17,969
ILLINOIS, UNIV. OF URBANA	CHEMICAL CHARACTERIZATION & ASSESSMENT OF MUTAGENIC POTENTIAL OF S-TRIAZINE METABOLITES	MEANS, J.	80629301	NEW	78/08/16	$100,000
ILLINOIS, UNIV. OF URBANA	GROUNDWATER SAMPLING AND SAMPLE PRESERVATION TECHNIQUES	GIBB, J.	80630401	NEW	78/09/22	$131,790
NORTHWESTERN UNIV. EVANSTON	TRACE HEAVY METALS REMOVAL WITH FERRATES	DUBLIN, ED.	80606401	NEW	78/08/17	$10,500
RUSH PRESBYTERIAN-ST. LUKE'S MED. CTR. CHICAGO	TYPE A VIRAL HEPATITIS: EFFECT OF CHLORINE ON ANTIGENICITY & INFECTIVITY	PETERSON, D.	80598601	NEW	78/06/29	$62,327
SOUTHERN ILLINOIS UNIV. CARBONDALE	GEOCHEMISTRY OF CADMIUM AND OTHER HEAVY METALS AS RELATED TO COAL STRIP MINING	HOOD, W.	80535302	CONT	78/06/15	$73,230
** DEMONSTRATION **						
METAL FINISHERS FDN. CHICAGO	METAL REMOVAL & CYANIDE DESTRUCTION USING CARBON FIBRE ELECTROCHEMICAL REACTOR	[illegible]URKIN, E.	80576801	NEW	78/06/19	$140,125
** TRAINING **						
ILLINOIS INST. OF TECH. CHICAGO	GRADUATE TRNG. IN AIR POLL.	NOLL, K.	90080301	NEW	78/07/24	$64,592
ILLINOIS, UNIV. OF URBANA	TRAINING IN WATER QUALITY CONTROL AND WATER TREATMENT	PFEFFER, J.	90086001	NEW	78/07/24	$27,700

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		I L L I N O I S				
** TRAINING ** WESTERN ILLINOIS UNIV. MACOMB	STATEWIDE PUBLIC PARTICIPATION IN WATER QUALITY MANAGEMENT IN ILLINOIS	GRIFFIN, D.	90081201	NEW	78/06/22	$7,000
** FELLOWSHIPS ** ILLINOIS, SO. UNIV. OF EDWARDSVILLE	ENVIRONMENTAL SYSTEMS TECHNOLOGY	HENRY, J.	91118201	NEW	78/06/01	$2,693

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		I N D I A N A				
** RESEARCH **						
AMERICAN PESTICIDE CONTROL, ASSOC. OF WEST LAFAYETTE	RESEARCH & EVALUATION OF FIFRA ISSUES IMPACTING ON STATE PESTICIDE REGULATORY PROGRAMS	NELSON, L.	80637101	NEW	78/09/20	$185,306
DEPAUW, UNIV. OF GREENCASTLE	AN INVESTIGATION OF BENTHIC & FISH COMMUNITIES OF STOTTS & EAGLE CREEKS AS RELATED TO THE MIP.	GAMMON,J.	80618401	NEW	78/07/21	$60,000
HOLCOMB RES. INST. INDIANAPOLIS	FACILITATION OF GENERAL UNDERSTANDING & APPLICATION OF GROUND WATER MODELS	KILLPACK, C.	80597801	NEW	78/06/09	$122,368
MUNCIE SAN. DIST. MUNCIE	STUDY & ANALYSIS OF THE MUNCIE INDIANA INDUSTRIAL PRETREATMENT PROGRAM	CRADDOCK, J.	80552801	INCR	78/07/07	$98,000
PURDUE RESEARCH FDN. W. LAFAYETTE	CHARACTERIZATION OF METAL COMPLEXES IN SEWAGE SLUDGE SYSTEMS	SOMMERS, L. E.	80454703	CONT	78/08/02	$75,369
PURDUE RESEARCH FDN. W. LAFAYETTE	BIODEGRADATION OF PRIORITY POLLUTANTS IN WASTEWATER TREAT. SYS.	NUKASCH, R.	80585801	NEW	78/05/08	$72,500
			80585801	INCR	78/08/14	$71,970
** TRAINING **						
NOTRE DAME, UNIV. OF NOTRE DAME	ENVIRONMENTAL HEALTH ENGINEERING TRAINING PROGRAM	IRVINE, R.	90082001	NEW	78/07/10	$20,300
PURDUE UNIV. WEST LAFAYETTE	TRAINING IN AIR POLLUTION CONTROL	ETZEL, JAMES E.	90019606	INCR	78/08/14	$14,000
** FELLOWSHIPS **						
INDIANA UNIV. INDIANAPOLIS	PUBLIC & ENV. AFFAIRS	STAPINSKI, R.	91129201	NEW	78/07/17	$2,032

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		I N D I A N A				
** FELLOWSHIPS **						
INDIANA UNIV. INDIANAPOLIS	BIOLOGY	WEISS, R.	91131501	NEW	78/08/09	$3,083
NOTRE DAME UNIV. SOUTH BEND	ENVIRONMENTAL STUDIES	DUCKWALL, C.	91128101	NEW	78/08/02	$5,200

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		I O W A				
** RESEARCH **						
IOWA STATE UNIV AMES	METHODS FOR DISPOSAL OF EXCESS PESTICIDES USED BY FARMERS	HALL, C.	80453302	INCR	78/09/11	$13,014
IOWA STATE UNIV. AMES	EFFECTS OF INCREASED SEDIMENTS LOADINGS CAUSED BY HUMAN ACTIVITY ON ALASKAN WETLAND VEGETATION.	VAN DER VALK A	80583701	NEW	78/04/11	$76,638
IOWA, UNIV. OF IOWA CITY	VERIFICATION OF A PESTICIDE TRANSPORT AND BIOACCUMULATION MODEL	SCHNOOR, J.	80605901	NEW	78/08/21	$48,347
** TRAINING **						
ASSOCIATION OF BDS. OF CERTIFICATION AMES	STATE TRAINING COORDINATING COMMITTEE PROJECT	CAMPBELL, D.	90084801	NEW	78/07/14	$65,000
BOARDS OF CERT., ASSN. OF AMES	DEVELOPMENT OF PERFORMANCE ORIENTATED EXAMINATIONS FOR WATER & WASTEWATER OP. PERS.	SEIDEL, H.	90079801	NEW	78/06/27	$70,000
			90079801	INCR	78/09/13	$14,240
IOWA CITIZENS INF. SERV.-LWVIA DES MOINES	STATEWIDE PUBLIC PARTICIPATION IN WATER QUALITY MANAGEMENT IN IOWA	SANDRA HOUSTON	90081801	NEW	78/06/21	$7,000
KIRKWOOD COMM COLLEGE CEDAR RAPIDS	INORGANIC ANALYSES AND BACTERIOLOGICAL METHODS IN WATER QUALITY CONTROL PROGRAMS	BARDONNER, C.	90091701	NEW	78/09/14	$10,000
KIRKWOOD COMMUN. COLLEGE CEDAR RAPIDS	OPERATIONAL CONSIDERATIONS FOR WWT PLANT DESIGN	BARDONNER, C.	90074701	INCR	78/07/24	$2,000
NATIONAL FIELD RES. INC. IOWA CITY	NATIONAL ENVRN./ENERGY WORKFORCE ASSESSMENT - PHASE III	ALBRIGHT, D.	90059103	CONT	78/04/28	$350,000

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		I O W A				
** TRAINING **			90059103	INCR	78/07/19	$27,800
** FELLOWSHIPS **						
IOWA, UNIV. OF IOWA CITY		BRINDLEY, D.	91130701	NEW	78/07/26	$6,000

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		K A N S A S				
** RESEARCH **						
KANSAS, UNIV. OF LAWRENCE	PESTICIDE USE REDUCTION THROUGH INTEGRATED CONTROL PROCEDURES ON MUSK THISTLE	MARTINKO, E.	80545502	CONT	78/07/31	$75,062
** TRAINING **						
KANSAS, UNIV. OF LAWRENCE	TRAINING GRANT IN WATER SUPPLY AND POLLUTION CONTROL	MCKINNEY, R.	90087101	NEW	78/07/31	$13,500

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		K E N T U C K Y				
** RESEARCH **						
ACARULOGICAL SOCIETY OF AMERICA LEXINGTON,	V INTERNATIONAL CONGRESS OF ACAROLOGY	RODRIGUEZ, J.	80605701	NEW	78/07/07	$6,000
INTERSTATE MINING COMPACT COMM. LEXINGTON	PREPARE AUDIO-VISUAL INSTRUCTIONAL COURSE ON SURFACE MINING & THE ENVIRONMENT	BOWLING, K.	80497202	INCR	78/09/28	$677,711
KENTUCKY, UNIV. OF LEXINGTON	CHARGED MEMBRANE UF & SULFIDE PRECIPITATION TO TREAT NONFERROUS METAL PRODUCTION WASTES	GRIEVES, ROBERT B.	80456802	INCR	78/08/21	$177,990
KENTUCKY, UNIV. OF LEXINGTON	METABOLISM OF CARBAMATE INSECTICIDES	BOROUGH, H.	80514302	CONT	78/04/20	$65,000
** FELLOWSHIPS **						
KENTUCKY, UNIV. OF LEXINGTON	M. S./CHEM. ENGR.	CARSON, D.	91107601	INCR	78/07/17	$1,295

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		L O U I S I A N A				
** RESEARCH **						
GULF SOUTH RES. INST. BATON ROUGE	TOTAL ORGANIC CHLORINE ANALYSIS INSTRUMENTATION FOR DIRECT DETERMINATION IN WATER WITHOUT PRECONCENT	MONTALVO, J.	80534001	NEW	78/05/26	$37,758
JEFFERSON PARISH JEFFERSON	GRANULAR ACTIVATED CARBON STUDIES	BRODTMANN, NOEL V.	80457101	INCR	78/06/19	$133,477
LOUISIANA STATE UNIV. BATON ROUGE	TRACE & TOXIC METALS IN SLUDGE-AMENDED SOILS	PATRICK, W.	80578901	NEW	78/08/24	$115,000
LOUISIANA STATE UNIV. BATON ROUGE	MUTAGEN EXCRETION BY IND. CONSUMING WATERS FR. MISSISSIPPI RIVER	PELON, W.	80587201	NEW	78/08/14	$144,755
LOUISIANA STATE UNIV. BATON ROUGE	DEVELOPMENT OF A DEPLOYABLE WATER QUALITY MONITORING SYSTEM	WHITEHURST, C.	80631301	NEW	78/09/11	$55,000
LOUISIANA STATE UNIV. & A&M COLLEGE BATON ROUGE	CARCINOGEN DETECTION IN PUBLIC WATER SUPPLIES & SOURCES WITH MAMMALIAN CELL MONITORS	PELON, WILLIAM	80018803	INCR	78/07/13	$27,500
NEW ORLEANS, UNIV. OF NEW ORLEANS	FORMATION OF CARCINOGENIC PHOTOOXIDATION PROD. FR. POLYAROMATIC	LASETER, J.	80464702	CONT	78/05/24	$8,085
			80464702	INCR	78/06/15	$17,111
			80464702	INCR	78/09/14	$20,000
SOUTHERN UNIVERSITY BATON ROUGE	EFFECTS OF POST-IMPLANTATION EXPOSURE TO SELECTED PESTICIDES ON REPRODUCTIVITY IN RATS	SPENCER, F.	80497402	CONT	78/09/18	$12,886

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		L O U I S I A N A				
** RESEARCH **						
TULANE UNIV. NEW ORLEANS	WATER SOURCES & CHARACTERISTICS & MALIGNANCY RATES OF SELECTED SITE IN SELECTED PARISHES OF LOUISIAN	GOTTLIEB, M.	80511002	CONT	78/05/04	$145,568
TULANE UNIV. NEW ORLEANS	EPIDEMIOLOGICAL-MICROBIOLOGICAL STUDY OF HEALTH EFFECTS AMONG SWIMMERS AT LAKE PONTCHARTRAIN	KTSANES, V.	80534101	INCR	78/06/19	$77,526
** DEMONSTRATION **						
EAST. BATON ROUGE. CITY-PARISH OF BATON ROUGE	CITY LAKES RESTORATION	BURGESS, R.	80583601	NEW	78/09/29	$1,500,000
** TRAINING **						
LOUISIANA LEAGUE OF WOMEN VOTERS BATON ROUGE	STATEWIDE PUBLIC PARTICIPATION IN WATER QUALITY MANAGEMENT IN LOUISIANA	BURT, J.	90087001	NEW	78/07/13	$7,000

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		M A I N E				
** RESEARCH **						
MAINE, UNIV. OF ORONO	ATMOSPHERIC EMISSIONS	SIMARD, G. FROM ASPHALT PRODUCTS	80600901	NEW	78/06/15	$22,094
** DEMONSTRATION **						
COBBOSSEE WATERSHED DIST. WINTHROP	COBBOSSEE WATERSHED LAKES RESTORATION PROJECT	GORDON, T.	80545401	INCR	78/08/16	$189,886

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		MARYLAND				
** RESEARCH **						
CHARLES CNTY. COMMUN. COLLEGE LA PLATA	FIELD STUDY OF NUTRIENT CONTROL IN A MULTI-CELL LAGOON	SCHWING, C.	80363702	INCR	78/05/19	$53,776
CHESAPEAKE RESEARCH CONSORTIUM ANNAPOLIS	DEFINITION OF CHESAPEAKE BAY PROBLEMS OF EXCESSIVE ENRICHMENT OR EUTROPHICATION	CRONIN, E.	80618901	NEW	78/09/18	$338,357
JOHN HOPKINS UNIV. BALTIMORE	BIOSTRATIGRAPHY OF THE CHESAPEAKE BAY AND ITS TRIBUTARIES:	BRUSH, G.	80596201	NEW	78/06/07	$134,675
JOHN HOPKINS UNIV. BALTIMORE	CHESAPEAKE BAY EARTH SCIENCE STUDY - INTERSTITIAL WATER CHEMISTRY	BRICKER, O.	80596301	NEW	78/05/31	$321,054
JOHN HOPKINS UNIV. BALTIMORE	CHESAPEAKE BAY EARTH SCIENCE STUDY - ANIMAL SEDIMENT RELATIONSHIP	BRICKER, O.	80596401	NEW	78/06/28	$113,398
JOHN HOPKINS UNIV. BALTIMORE	CHESAPEAKE BAY EARTH SCIENCE STUDY - BOTTOM SEDIMENTS	KERHIN, R.	80596501	NEW	78/06/28	$247,613
JOHNS HOPKINS UNIV. BALTIMORE	MONITORING PARTICLE-ASSOCIATED TOXIC SUBSTANCES & SUSPENDED SEDIMENT IN CHESAPEAKE BAY	GROSS, G.	80595901	NEW	78/06/29	$126,189
JOHNS HOPKINS UNIV. BALTIMORE	STABILITY AND EFFECTIVENES OF CHLORINE, CHLORAMINE & CHLORINE DIOXIDE IN WATER DISTRIBUTION SYSTEM	OLIVIERI, V.	80607401	NEW	78/08/01	$126,912
MARYLAND STATE ENVRN. SERVICE ANNAPOLIS	REFUSE DERIVED FUEL AS A SUPPLEMENTAL FUEL IN CEMENT KILNS	WILLEY C.R.	80561301	INCR	78/07/14	$148,008
MARYLAND WATER RES. ADM. ANNAPOLIS	INVESTIGATIONS OF THE CHESTER RIVER OYSTER MORTALITY	HAMONS, F.	80597601	NEW	78/06/29	$83,750

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		MARYLAND				
** RESEARCH **						
MARYLAND WATER RES. ADMIN. ANNAPOLIS	CHESAPEAKE BAY RES. PROG.	HAMONS, F., JR.	80587401	NEW	78/05/15	$328,130
			80587401	INCR	78/09/11	$10,000
MARYLAND WATER RES. ADMIN. ANNAPOLIS	INTENSIVE WATERSHED STUDY AND DISCHARGE MONITORING SYSTEM	HAMONS, F.	80630601	NEW	78/09/14	$452,340
MARYLAND WATER RESOURCES ADM. ANNAPOLIS	EVALUATION OF WATER QUALITY MANAGEMENT TOOLS IN THE CHESTER RIVER BASIN	HAMONS, F.	80634301	NEW	78/09/18	$428,340
MARYLAND, UNIV. OF BALTIMORE	EFFECTS OF SULFURIC ACID AEROSOL UPON RESPIRATORY FUNCTION	KERR, D.	80480302	CONT	78/04/07	$450,000
MARYLAND, UNIV. OF COLLEGE PARK	ECONOMIC ASPECTS OF EFFECTS UPON HEALTH AND CLIMATE FROM THE MANAGEMENT & CONTROL OF OZONE DEPLETION	CUMBERLAND, J.	80541101	INCR	78/09/01	$104,571
MARYLAND, UNIV. OF COLLEGE PARK	SUBMERGED AQUATIC VEGETATION IN THE CHESAPEAKE BAY	STEVENSON, C.	80593201	NEW	78/06/21	$639,311
MARYLAND, UNIV. OF COLLEGE PARK	CHESAPEAKE BAY SEDIMENT TRACE METALS	HELZ, G.	80595401	NEW	78/06/27	$143,765
MARYLAND, UNIV. OF COLLEGE, PARK	AMMONIA REMOVAL FROM STEEL INDUSTRY WASTEWATER	BIRKNER, F.	80604101	NEW	78/08/04	$8,777
MARYLAND, UNIV. OF COLLEGE PARK	INTERPRETATION OF RAPS ATMOSPHERIC ELEMENTAL CONCENTRATION DATA	GORDON, G.	80626301	NEW	78/09/11	$57,739

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		M A R Y L A N D				
** RESEARCH **						
RADIATION RES. SOC. BETHESDA	VI INTERN'L. CONGRESS OF RADIATION RES., TOKYO, MAY 1979; REQUEST FOR FINANCIAL SUPPORT	ELKIND, M.	80604401	NEW	78/08/18	$8,000
** DEMONSTRATION **						
HAGERSTOWN, CITY OF HAGERSTOWN	DEMONSTRATION OF THE THERMOPHILLIC AEROBIC ANAEROBIC DIGESTION PROCESS AT HAGERSTOWN, MD	MCGAUEHY, M.	80582301	NEW	78/07/31	$331,705
** TRAINING **						
AMERICAN ACADEMY OF ENV. ENG. ROCKVILLE	ACADEMIC TRAINING GRANT	HANNA, G.	90091101	NEW	78/09/18	$50,000
BALTIMORE ENVR. CENTER BALTIMORE	PUBLIC PARTICIPATION STATEWIDE WATER QUALITY MANAGEMENT PLANNING	REEVES, M.	90081901	NEW	78/06/22	$50,000
CHARLES CNTY. COMMUN. COLLEGE LA PLATA	WATER POLLUTION CONTROL TRAINING & MATERIAL DEVELOPMENT	SCHWING, CARL M.	90061401	INCR	78/08/18	$32,400
CHARLES CNTY. COMMUN. COLLEGE LA PLATA	WATER POLLUTION CONTROL TRAINING	ENGEL, W.	90074001	INCR	78/06/19	$10,000
CHARLES COUNTY COMM. COLLEGE LA PLATA	STATE INSTITUTIONALIZED EDUCATION/TRAINING PROGRAMS FOR WASTEWATER TREATMENT OPERATORS AND LABORATOR	ENGEL, W.	90090301	NEW	78/08/21	$200,000
			90090301	INCR	78/09/11	$20,000
CHARLES COUNTY COMM. COLLEGE LA PLATA	PRESENTATION OF 3 TRAINING COURSES, INORGANIC ANALYSES IN WQCP	ENGEL, W.	90090401	NEW	78/09/11	$10,000

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		M A R Y L A N D				
** TRAINING **						
MARYLAND DEPT. OF HEALTH & MENTAL HYG. BALTIMORE CITY	MARYLAND MUNICIPAL WATER AND WASTEWATER FACILITY MANPOWER INFORMATION SYSTEM	HOLTAN, A.	90084401	NEW	78/07/14	$12,000
** FELLOWSHIPS **						
ALLEGANY COMM. COLLEGE CUMBERLAND	AA/CHEMISTRY	TENAGLIO, R.	91129101	NEW	78/07/20	$1,778
CATONSVILLE, COMM. COLLEGE BALTIMORE	MECHANICAL ENGINEERING	FILAR, M.	91132901	NEW	78/09/07	$908
JOHNS HOPKINS UNIV. BALTIMORE	HEALTH & BIOLOGY	SHEESLEY, R.	91125901	NEW	78/06/15	$5,826
JOHNS HOPKINS UNIV. BALTIMORE	ENVIRONMENTAL ENGINEERING	NACE, RICHARD	91126101	NEW	78/06/27	$1,180
JOHNS HOPKINS UNIV. BALTIMORE	CIVIL ENGINEERING	DERIEUX, R.	91126201	NEW	78/06/27	$1,450
JOHNS HOPKINS UNIV. BALTIMORE	CIVIL ENGINEERING	SOMERBY J.	91126401	NEW	78/06/27	$3,120
JOHNS HOPKINS UNIV. BALTIMORE	BIOLOGICAL SCIENCE	LOWERY, N.	91126501	NEW	78/07/10	$6,000
MARYLAND, UNIV. OF COLLEGE PARK	M.S./PUBLIC ADMIN.	RAMSEY, W. L.	91096601	INCR	78/07/17	$2,230
MARYLAND, UNIV. OF COLLEGE PARK	M.S./WATER RESOURCES ENGR./FULL TIME AGENCY	WILSON, H.	91111501	INCR	78/07/19	$2,242

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		M A R Y L A N D				
** FELLOWSHIPS **						
MARYLAND, UNIV. OF COLLEGE PARK	M.S./CIVIL ENGR.	SCHMIDT, T.	91112801	INCR	78/07/21	$2,230
MARYLAND, UNIV. OF COLLEGE PARK	WATER SUPPLY-FULL TIME AGENCY	HOGAN, T.	91113401	INCR	78/07/19	$2,230
MARYLAND, UNIV. OF COLLEGE PARK	ENVIRONMENTAL ENGINEERING	HEALY, R.	91126301	NEW	78/06/27	$330
			91126301	INCR	78/09/27	$5,670
MARYLAND, UNIV. OF COLLGE PARK		YOUNG, G.	91127201	NEW	78/07/17	$1,685
TOWSON ST. UNIV. TOWSON	CONSERVATION & RESOURCE MANAGEMENT	APPERTI, M.	91126001	NEW	78/07/14	$472
MARYLAND, UNIV. OF COLLEGE PARK	M.S./CIVIL ENGR./PART TIME	COVER, C.	91111801	INCR	78/07/17	$2,409

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		MASSACHUSETTS				
** RESEARCH **						
BOSTON COLLEGE CHESTNUT HILL	DEVELOPMENT OF A MINIATURIZED UV-B INSTRUMENT FOR PERSONAL DOSIMETRY	GOLDSMITH, G.	80634701	NEW	78/09/07	$90,000
CLARK UNIV. WORCESTER	INTERACTIONS AMONG RECENT LEGISLATION AFFECTING THE PUBLIC WATER SUPPLY	SCHWARZ, M.	80620901	NEW	78/08/16	$55,498
HARVARD COLLEGE CAMBRIDGE	HIGH VELOCITY FABRIC FILTRATION	FIRST, M.	80470003	CONT	78/08/07	$147,079
HARVARD UNIV. CAMBRIDGE	ORGANIC N-CHLORO COMPOUNDS IN CHLORINATION OF WATER SUPPLIES-THEIR FORMATION & SIGNIFICANCE	MORRIS, J. CARROLL	80363102	INCR	78/08/14	$34,953
LOWELL, UNIV. OF LOWELL	NEW AMINE CARBAMATE GELATION TECHNIQUES FOR USE IN OIL SPILL RECOVERY OPERATIONS	BANNISTER, W. W.	80462801	INCR	78/04/26	$5,870
LOWELL, UNIV. OF LOWELL	MANUFACTURE AND USE OF MODULAR EQUIPMENT FOR CONTROL AND RECOVERY OF OIL SPILLS BY GELATIN WITH AMIN	BANNISTER, W.	80611801	NEW	78/08/14	$74,707
LOWELL, UNIV. OF LOWELL	SPECTRAL UVB IRRADIANCE AND OZONE MONITORING	REINISCH, B.	80624501	NEW	78/08/17	$50,000
MARLBOROUGH, CITY OF MARLBOROUGH	OZONE DEMONSTRATION STUDY-ELECTRON BEAM ACCELERATOR	SHARON, PAUL A.	80494601	INCR	78/08/17	$10,000
MASSACHUSETTS INST. OF TECH. CAMBRIDGE	NO EMMISSION FROM FLUIDIZED COMBUSTION	BEER, J.	80497802	INCR	78/08/11	$10,000
MASSACHUSETTS INST. OF TECH. CAMBRIDGE	NO EMISSION FROM FLUIDIZED COMBUSTION	BEER, J.	80497803	CONT	78/08/09	$190,000

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		M A S S A C H U S E T T S				
** RESEARCH **						
MASSACHUSETTS INST. OF TECH. CAMBRIDGE	REDUCTION OF POLLUTANT FORMATION IN COAL PARTICLE AND LIQUID FUEL SPRAY FLAMES	BEER, J.	80555202	CONT	78/08/21	$150,000
MASSACHUSETTS INST. OF TECH. CAMBRIDGE	KINETICS OF EVOLUTION OF SULFUR-BEARING GASES FR. BLAST FURNACES	ELLIOTT, J.	80588601	NEW	78/07/07	$13,200
MASSACHUSETTS INST. OF TECH. CAMBRIDGE	TREATMENT OF GASEOUS EMISSIONS FROM STEELPLANTS CONTAINING SMALL CONCENTRATION OF HYDROCARBON VAPORS	SZEKELY, J.	80605001	NEW	78/08/16	$10,000
MASSACHUSETTS INST. OF TECH. CAMBRIDGE	ORGANIC COMPOUNDS IN RIVERS: A GC/MS STUDY	HITES, R.	80635001	NEW	78/08/24	$200,000
MASSACHUSETTS, UNIV. OF AMHERST	NATURAL INHIBITING FACTORS IN AN AGGRESSIVE DRINKING WATER SUPPLY	ZAJICEK, O.	80563802	CONT	78/08/22	$24,318
MASSACHUSETTS, UNIV. OF AMHERST	EFFECT OF OZONE & NITROGEN DIOXIDE ON MICE	CALABRESE, E.	80579701	NEW	78/06/19	$102,767
MASSACHUSETTS, UNIV. OF AMHERST	EFFECT OF CHLORITES, NITRITES, CHLORAMINES, COPPER AND COMBINATIONS ON NEONATE & PREGNANT MICE WITH	MOORE, G.	80599301	NEW	78/07/14	$73,279
TUFTS UNIV. BOSTON	IN VIVO ANALYSIS OF UV-B INDUCED PHOTOOXIDATIONS	KRINSKY, N.	80606601	NEW	78/07/31	$42,500
TUFTS UNIV. MEDFORD	EPIDEMIOLOGY OF SELECTED MARINE BEACHES IN MASSACHUSETTS	DRUMMOND, D.	80617801	NEW	78/07/18	$32,706
TUFTS UNIV. MEDFORD	STUDY OF ENERGY CONSERVATION IN THE TREATMENT OF INDUSTRIAL WASTEWATERS	VAN WORMER, K.	80621501	NEW	78/08/29	$109,797

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		MASSACHUSETTS				
** RESEARCH **						
WHEATON COLLEGE NORTON	SKELETAL VARIANTS AS AN INDICATOR OF BIOLOGICAL EFFECTS OF ENVIRONMENTAL CONTAMINANTS	BECK, S.	80542002	CONT	78/08/29	$38,286
WOODS HOLE OCEANOGRAPHIC INST. WOODS HOLE	BIOLOGICAL RECOVERY FOLLOWING AN OIL SPILL	SANDERS, HOWARD	80100102	INCR	78/09/28	$33,786
** DEMONSTRATION **						
BILLERICA, TOWN OF BILLERICA	RESTORATION OF WATER QUALITY IN NUTTING LAKE THROUGH NUTRIENT MGMT & CONTROL	KING, F.	80502801	INCR	78/07/31	$74,948
STURBRIDGE, TOWN OF STURBRIDGE	CLEAN LAKES, BIG ALUM RESTORATION & PRESERVATION	LYMAN, L.	80607101	NEW	78/09/29	$49,077
** TRAINING **						
BOSTON COLLEGE WESTON	AIR POLL. MNPWR. TRNG.	RIDER, T.	90080501	NEW	78/06/22	$48,940
HARVARD UNIV. BOSTON	GRADUATE TRAINING IN AIR POLL.	MOELLER, D.	90068102	CONT	78/07/14	$30,000
MASSACHUSETTS AUDUBON SOCIETY LINCOLN	STATEWIDE PUBLIC PARTICIPATION WATER QUALITY MANAGEMENT IN MASSACHUSETTS	HOWARD, D.	90083701	NEW	78/06/21	$7,000
NORTHEASTERN UNIV. BOSTON	GRADUATE TRAINING IN WATER QUALITY ENGINEERING	COCHRANE, J.	90090101	NEW	78/08/14	$24,850
TUFTS UNIV. MEDFORD	GRADUATE TRAINING FOR ENVIRONMENTAL ENGINEERING	HANES, B.	90087301	NEW	78/07/24	$42,050

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		M A S S A C H U S E T T S				
** FELLOWSHIPS **						
HARVARD SCHOOL OF PUB. HLTH. BOSTON	AIR POLLUTION CONTROL	ELLENBECKER, M .	91121701	NEW	78/07/10	$4,985
HARVARD SCHOOL OF PUBLIC HEALTH BOSTON	INDUSTRIAL ENGINNERING	EVANS, J.	91117901	NEW	78/06/28	$5,963
HARVARD UNIV. BOSTON	PH.D/ENVRN. HEALTH SCIENCE	COLOME, S.	91109801	INCR	78/07/31	$980
HARVARD UNIV. BOSTON	AIR POLLUTION	KALINOWSKI, T.	91118701	NEW	78/06/28	$6,760
HARVARD UNIV. BOSTON	ENVIRONMENTAL SCIENCES	DINES, D.	91118801	NEW	78/06/19	$7,750
HARVARD UNIV. BOSTON	ENVIRONMENTAL PLANNING	GURCHIN, M.	91119201	NEW	78/06/28	$7,834
HARVARD UNIV. BOSTON	ARCHITECTURE	WILSON, C.	91119401	NEW	78/06/28	$7,920
HARVARD UNIV. CAMBRIDGE	CITY AND REGIONAL PLANNING	GOLDMAN, N.	91121601	NEW	78/07/13	$7,850
HARVARD UNIV. CAMBRIDGE	CITY & REGIONAL PLANNING	TARSHIS, S.	91123401	NEW	78/06/28	$7,834
MASSACHUSETTS INST. OF TECH. CAMBRIDGE	SM BIOLOGY	TOMEI, F.	91116301	NEW	78/07/19	$6,000

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		MASSACHUSETTS				
** FELLOWSHIPS **						
NEW ENGLAND SCH. OF LAW BOSTON		LOSAPIO, P.	91124301	NEW	78/07/31	$5,053
NORTHEASTERN UNIV. BOSTON	M.S./ENVRN. ENGR.	CHRETIEN, R. R.	91086401	INCR	78/06/27	$1,800
NORTHEASTERN UNIV. BOSTON	M.S.	PAWLOWSKI, E. J.	91087101	INCR	78/07/13	$1,800
NORTHEASTERN UNIV. BOSTON	M.S./SAN. ENGR.	PARE, M. K.	91098601	INCR	78/06/27	$3,436
NORTHEASTERN UNIV. BOSTON	CHEMISTRY/MATH	BLEAU, E.	91121301	NEW	78/06/29	$8,283
NORTHEASTERN UNIV. BOSTON	CIVIL ENGINEERING	BOURQUE, D.	91135501	NEW	78/09/18	$2,572

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		M I C H I G A N				
** RESEARCH **						
MICHIGAN ST. UNIV. EAST LANSING	AN ECONOMIC ANALYSIS OF AN AGRO-ECOSYSTEM FOR PEST CONTROL	HAYNES, D.	80606501	NEW	78/09/11	$45,967
MICHIGAN STATE UNIV. EAST LANSING	EVALUATION OF DREDGING AS A LAKE RESTORATION TECHNIQUE	MCNABB, CLARENCE D.	80504601	INCR	78/09/20	$33,899
MICHIGAN STATE UNIV. EAST LANSING	SOIL AND CROP MGMT. SYS. FOR TREATMENT, UTILIZATION AND DISPOSAL OF MUNICIPAL WASTEWATERS & SLUDGES	ERICKSON, A.	80527002	CONT	78/04/12	$138,206
MICHIGAN STATE UNIV. EAST LANSING	HUMAN EPITHELIAL CELL METABOLIC ACTIVATION SYSTEMS FOR USE WITH HUMAN CELL MUTAGENESIS	MCCORMICK, J. J.	80556301	NEW	78/09/07	$82,500
MICHIGAN STATE UNIV. EAST LANSING	ECOSYSTEM RESPONSES TO ALTERNATIVE PESTICIDES IN THE ENVIRONMENT	GOODMAN, E.	80562402	CONT	78/09/18	$116,897
MICHIGAN STATE UNIV. EAST LANSING	DEVELOPMENT OF PROCESSOR BASED SYSTEM FOR COMMUNICATION OF INTEGRATED PEST MANAGEMENT INFORMATION	BATH, J.	80573001	NEW	78/05/26	$87,160
MICHIGAN STATE UNIV. EAST LANSING	DESIGN AND MANAGEMENT OF A MULTIPEST AGROECOSYSTEM	HAYNES, D.	80603401	NEW	78/08/04	$78,905
MICHIGAN STATE UNIV. MONTICELLO	ASSESSMENT OF ENERGY-RELATED TOXICANT STRESS IN AN ENGINEERED ECOSYSTEM	HOLING, R.	80621401	NEW	78/09/18	$75,133
MICHIGAN TECH. UNIV. HOUGHTON	UTILITY OF WET OXIDATION IN THE TREATMENT OF HAZARDOUS ORGANIC WASTES	BAILOD, R.	80556501	INCR	78/08/18	$90,000
MICHIGAN TECH. UNIV. HOUGHTON	CYANIDE REMOVAL FROM COKE MAKING AND BLAST FURNACE WASTE WATER	SPOTTISWOOD, D.	80580701	NEW	78/07/21	$19,645

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		M I C H I G A N				
** RESEARCH **						
MICHIGAN, UNIV. OF ANN ARBOR	WATER QUALITY STUDIES ON RIVER NILE AND LAKE NASSER	MANCY, KHALIL	80329105	CONT	78/09/06	$20,000
MICHIGAN, UNIV. OF ANN ARBOR	LONG PATH AIR POLLUTION MONITOR EVALUATION	BARTMAN, F. L.	80339903	INCR	78/05/01	$7,698
MICHIGAN, UNIV. OF ANN ARBOR	WATER SUPPLY RESEARCH GRANT	WEBER, W.	80436903	CONT	78/08/16	$113,139
MICHIGAN, UNIV. OF ANN ARBOR	RATES OF ACCUMULATION OF POTENTIALLY HAZARDOUS SUBSTANCES IN RECENT SEDIMENTS OF LAKE HURON	ROBBINS, J.A.	80468602	INCR	78/05/15	$80,000
MICHIGAN, UNIV. OF ANN ARBOR	ANALYSIS OF PLANKTONIC DIATOMS FROM LAKE MICHIGAN WATER	BEETON, R.	80513301	INCR	78/04/03	$15,363
MICHIGAN, UNIV. OF ANN ARBOR	DEVELOPMENT OF AN IN VITRO NEUROTOXICITY ASSAY	RICHARDSON, R.	80533902	CONT	78/06/21	$64,850
MICHIGAN, UNIV. OF ANN ARBOR	EVALUATION OF GAS FILTER CORRELATION TECH. FOR THE SINGLE-ENDED MEASUREMENT OF SO2	BARTMAN, F.	80595601	NEW	78/08/02	$18,734
			80595601	INCR	78/08/29	$11,266
MICHIGAN, UNIV. OF ANN ARBOR	A DATA ANALYSIS & MANAGEMENT SYSTEM FOR PUBLIC WATER SUPPLIES	DESININGER, R.	80599401	NEW	78/06/27	$55,400
MICHIGAN, UNIV. OF ANN ARBOR	REMOVAL OF TOXIC SUBSTANCES FROM WASTEWATERS BY INTEGRATED BIOLOGICAL-ACTIVATED CARBON TREATMENT	WEBER, W.	80603001	NEW	78/07/25	$150,000

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		M I C H I G A N				
** RESEARCH **						
MICHIGAN, UNIV. OF ANN ARBOR	FEASIBILITY STUDY FOR THE MATHEMATICAL MODELING AND CONTROL OF CLADOPHORA IN THE GREAT LAKES	CANALE, R.	80614901	NEW	78/07/18	$26,567
MICHIGAN, UNIV. OF ANN ARBOR	ASSESSMENT OF ENTRAINMENT AND IMPINGEMENT ON YELLOW PERCH	JENSEN, A.	80615901	NEW	78/09/13	$20,110
MICHIGAN, UNIV. OF ANN ARBOR	SINKING RATES OF PHYTOPLANKTON & OTHER PARTICULATES	SCHELSKE, C.	80629401	NEW	78/09/11	$329,892
** TRAINING **						
MICHIGAN UNITED CONSV. CLUBS LANSING	STATEWIDE PUBLIC PARTICIPATION IN WATER QUALITY MANAGEMENT IN MICHIGAN	SCHMIDT, W.	90081101	NEW	78/06/27	$7,000
MICHIGAN, WEST, ENV. ACT. ED. FDN. GRAND RAPIDS	CITIZEN EDUCATION & ACTIVITY	CONNER, R.	90077201	INCR	78/09/19	$20,000
** FELLOWSHIPS **						
MICHIGAN ST. UNIV. EAST LANSING	CIVIL ENGINEERING	BENZIE, R.	91124701	NEW	78/07/13	$6,000
MICHIGAN, UNIV. OF ANN ARBOR	ENVIRONMENTAL HEALTH	EUBANK, K.	91123501	NEW	78/08/29	$10,725

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		M I N N E S O T A				
** RESEARCH **						
MINNESOTA, UNIV. OF MINNEAPOLIS	EFFECT OF CYANIDE ON FRESHWATER FISH AND INVERTEBRATES	SMITH, LLOYD L.	80291403	INCR	78/05/15	$5,000
MINNESOTA, UNIV. OF ST. PAUL	FORMATION OF ATMOSPHERIC AEROSOLS	WHITBY, K.	80385103	INCR	78/05/24	$216,000
MINNESOTA, UNIV. OF ST. PAUL	ORGANIC LEACHING AND PARTICULATE DISPERSION FROM COAL	CAPLE , R.	80395203	INCR	78/08/09	$11,060
MINNESOTA, UNIV. OF MINNEAPOLIS	EFFECT OF TEMPERATURE ON GROWTH AND SURVIVAL OF WHITE SUCKER	HELLER, M.	80450101	INCR	78/09/18	$15,944
MINNESOTA, UNIV. OF ST. PAUL	DEVELOPMENT OF CHRONOEPIDEMIOLOGIC METHODS WITH REFERENCE TO CARDIOPULMONARY CONDITIONS	HALBERG, F.	80451203	CONT	78/06/21	$40,265
MINNESOTA, UNIV. OF MINNEAPOLIS	RESEARCH ON AIR SAMPLING FILTER MEDIA	LIU, B.	80460002	INCR	78/04/06	$25,000
MINNESOTA, UNIV. OF MINNEAPOLIS	RESEARCH ON AIR SAMPLING FILTER MEDIA	LIU, B.	80460003	CONT	78/09/11	$40,000
MINNESOTA, UNIV. OF MINNEAPOLIS	RENEWAL OF WATER TEMPERATURE STUDIES AT THE USEPA MONTICELLO FIELD STATION	STEFAN, H.	80473601	INCR	78/04/21	$17,507
MINNESOTA, UNIV. OF ST. PAUL	STRUCTURE ACTIVITY CORRELATION STUDIES	MAGNUSON, V.	80495303	CONT	78/09/07	$10,000
			80495303	INCR	78/09/28	$50,000

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APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		M I N N E S O T A				
** RESEARCH **						
MINNESOTA, UNIV. OF ST PAUL	GENERALIZATION OF WATER QUALITY CRITERIA USING COMPUTER MODELS	HARRIS, D.	80499603	CONT	78/09/07	$125,000
MINNESOTA, UNIV. OF MINNEAPOLIS	ATMOSPHERIC INPUT OF TRACE METALS TO LAKE MICHIGAN	EISENREICH, S.	80517201	INCR	78/05/24	$19,990
MINNESOTA, UNIV. OF ST. PAUL	INFLUENCE OF EXTERNAL FACTORS OF TOXICITY OF IRON AND COPPER CYANIDE FORMS	HELLER, M.	80529101	INCR	78/08/16	$2,524
MINNESOTA, UNIV. OF ST. PAUL	CONTAMINANT DISPERSION IN LAKE SUPERIOR	SYDOR, M.	80566701	NEW	78/05/19	$134,000
MINNESOTA, UNIV. OF ST. PAUL	DISPERSAL OF COAL DUST FROM TRANSHIPMENT AND POWER PLANT STORAGE FACILITIES	SYDOR, M.	80602001	NEW	78/07/10	$57,000
MINNESOTA, UNIV. OF ST. PAUL	ENVIRONMENTAL IMPACT OF ENERGY-RELATED ORGANIC COMPOUNDS ON AQUATIC ORGANISMS	CARLSON, R.	80608301	NEW	78/07/13	$83,789
MINNESOTA, UNIV. OF MINNEAPOLIS	PCB AND DDT CYCLING IN LAKE SUPERIOR	EISENREICH, S.	80608401	NEW	78/09/18	$116,000
MINNESOTA, UNIV. OF MINNEAPOLIS	STUDIES ON DROPLET ELECTRIFICATION IN RELATION TO LIQUID CHROMATOGRAPHIC DETECTION	LUI, B.	80617501	NEW	78/07/31	$35,000
MINNESOTA, UNIV. OF ST. PAUL	ASSESS. OF HEALTH RISKS ASSOC. WITH ORGANIC CONTAMINANTS-GREAT LAKES BASIN	SCHUMAN, L.	80628201	NEW	78/09/13	$50,000
WESTERN LAKE SUPERIOR SANITARY DIST. DULUTH	TECHNICAL, ENVIRONMENTAL & ECONOMIC CO-DISPOSAL SYSTEM RESEARCH EVALUATION	BOO, BEN	80614401	NEW	78/08/18	$199,690

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		M I N N E S O T A				
** DEMONSTRATION **						
ELY, CITY OF ELY	LAKE RESTORATION BY PHOSPHORUS CONTROL	GRAHEK, J. P.	80230901	INCR	78/04/25	$248,000
MINNEAPOLIS METRO WASTE CNTRL. ST. PAUL	PROCESS AUTOMATION EVALUATION	POLTA, R.	80360204	CONT	78/05/19	$90,000
MINNESOTA, UNIV. OF ST. PAUL	MONITORING OF ST. PAUL SOLID WASTE BALEFILL SITE	THOMPSON, FAY M.	80477501	INCR	78/07/17	$13,845
** TRAINING **						
MINNESOTA ENVRN. SCI. FDN MINNEAPOLIS	STATEWIDE PUBLIC PARTICIPATION IN WATER QUALITY MANAGEMENT IN MINNESOTA	NAYLON, M.	90082101	NEW	78/06/27	$7,000
MINNESOTA, UNIV. OF MINNEAPOLIS	GRADUATE TRAINING IN AIR POLLUTION	PAULUS, H.	90067602	CONT	78/07/14	$15,000
** FELLOWSHIPS **						
MINNESOTA, UNIV. OF MINNEAPOLIS	M.S./ENVRN. HEALTH	RYDELL, C. D.	91099101	INCR	78/07/14	$101
MINNESOTA, UNIV. OF MINNEAPOLIS	M.S./PUBLIC HEALTH-FULL TIME	VOITA, M.	91100101	INCR	78/07/17	$130
MINNESOTA, UNIV. OF MINNEAPOLIS	BS POLLUTION CONTROL & ECOLOGY	REUBEN, B.	91116401	NEW	78/07/13	$10,300
MINNESOTA, UNIV. OF SHOREVIEW	B.S. EARTH SCIENCE	KELSO, D.	91117201	NEW	78/07/10	$4,416

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		M I N N E S O T A				
** FELLOWSHIPS **						
MINNESOTA, UNIV. OF MINNEAPOLIS	PSYCHOLOGY	TRIMBACH, J.	91117501	NEW	78/07/31	$7,100
MINNESOTA, UNIV. OF MINNEAPOLIS	BIOLOGY/CHEMISTRY	SADLER, S.	91117601	NEW	78/06/19	$10,300
MINNESOTA, UNIV. OF MINNEAPOLIS	URBAN STUDIES	KEMP, A.	91117801	NEW	78/06/15	$5,800
MINNESOTA, UNIV. OF MINNEAPOLIS	GEOGRAPHY	NELSON, S.	91118501	NEW	78/06/12	$5,800
MINNESOTA, UNIV. OF MINNEAPOLIS	ENTOMOLOGY	WEDLUND, R.	91120101	NEW	78/07/13	$4,660
MINNESOTA, UNIV. OF MINNEAPOLIS		BOSMAN, THOMAS	91132501	NEW	78/09/06	$4,080

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		M I S S I S S I P P I				
** RESEARCH **						
SOUTHERN MISSISSIPPI UNIV HATTIESBURG	DEVELOPMENT OF A CARCINOGEN ASSAY SYSTEM UTILIZING ESTUARINE FISHES	MARTIN, B.	80621201	NEW	78/08/16	$70,000
** TRAINING **						
MISSISSIPPI ST. UNIV. MISSISSIPPI STAT	SCIENCE AND PRACTICE OF WATER POLLUTION CONTROL	SHINDALA, A.	90086801	NEW	78/08/08	$19,250
** FELLOWSHIPS **						
MISSISSIPPI ST. UNIV. MISSISSIPPI STATE	CIVIL ENGR	LOTT, CHARLES	91131701	NEW	78/09/06	$6,000

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		M I S S O U R I				
** RESEARCH **						
MIDWEST RESEARCH INST. KANSAS CITY	RIVER BASIN VALIDATION OF THE MRI NONPOINT CALCULATOR	NEBGEN, J.	80631501	NEW	78/08/16	$103,820
MISSOURI, UNIV. OF COLUMBIA	STUDY OF CANCER AND THE PUBLIC DRINKING WATER SUPPLIES OF MISSOURI	MARIENFELD, C.	80529702	CONT	78/08/11	$193,100
MISSOURI, UNIV. OF COLUMBIA	DEVELOPMENT OF PEST MANAGEMENT STRATEGIES FOR SOIL INSECTS ON CORN	FAIRCHILD, M.	80542902	CONT	78/07/31	$310,000
WASHINGTON UNIV. ST. LOUIS	SULFUR BUDGET IN LARGE PLUMES	HUSAR, R. B.	80389602	INCR	78/04/24	$234,000
WASHINGTON UNIV. ST. LOUIS	TECHNIQUES FOR THE MEASUREMENT OF AEROSOL CARBON CONTENT	MACIAS, E	80600501	NEW	78/06/12	$15,000
			80600501	INCR	78/08/02	$20,737
WASHINGTON UNIVERSITY ST. LOUIS	STUDIES TO IMPROVE THE RELIABILITY & SENSITIVITY OF BACTERIAL MUAUGENESIS	COMMONER, B.	80439503	CONT	78/04/13	$100,000
			80439503	INCR	78/08/07	$81,925
WASHINGTON UNIVERSITY ST. LOUIS	SULFUR BUDGET IN POWER PLANT PLUMES	GILLANI, N.	80591801	NEW	78/06/12	$50,000
** DEMONSTRATION **						
SAINT LOUIS CNTY. CLAYTON	CREVE COEUR LAKE DREDGING PROJECT	KENNEDY, W.	80547901	NEW	78/07/11	$1,019,220

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		MISSOURI				
** TRAINING **						
MISSOURI, UNIV. OF COLUMBIA	PROFESSIONAL TRAINING IN WATER SUPPLY AND POLLUTION CONTROL	GRIGOROPOULOS, S.	90087201	NEW	78/07/24	$17,350
WATER & WASTEWATER TECH. SCH. NEOSHO	TRAINING IN ORGANIC & INORGANIC ANALYSES IN WATER QUALITY CONTROL PROGRAMS	LAYTON, R.	90091501	NEW	78/09/19	$10,000
** FELLOWSHIPS **						
MISSOURI, UNIV OF COLUMBIA	CIVIL ENGINEER	PRICE, W.	91128401	NEW	78/07/14	$6,000
MISSOURI, UNIV. OF ROLLA	PHYSICS, CHEMISTRY AND MATHEMATICS	RANJIT, KUMAR	91126901	NEW	78/07/01	$1,750
NORTHEAST MISSOURI ST. UNIV. MACON	SOCIOLOGY	GERKEN, M.	91131401	NEW	78/08/09	$2,826
WATER & WASTEWATER TECHNICAL SCHOOL NEOSHA	WASTEWATERTREATMENT	GUITUGUA, J.	91132001	NEW	78/09/18	$6,000

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		M O N T A N A				
** RESEARCH **						
HELENA DEPT. HEALTH & ENVRN. SCIENCES HELENA	EFFECTS OF PARTICLE SIZE ON LANDFILLED SOLID WASTE: COLD CLIMATE STUDIES	ROBERTSON, D.	80501201	INCR	78/06/12	$29,010
HELENA, CITY OF HELENA	EVALUATION OF ACTIVATED BIO-FILTER WASTEWATER TREATMENT PROCESS	NISBET, D.	80604701	NEW	78/07/25	$60,000
MONTANA STATE UNIV. BOZEMAN	USE OF LICHENS AS INDICATORS AND PREDICTORS OF AIR POLLUTION	EVERSMAN, S.	80536702	CONT	78/08/04	$11,153
MONTANA STATE UNIV. BOZEMAN	MONITORING PLANT COMMUNITY CHANGES DUE TO FOSSIL FUEL POWER PLANTS IN EASTERN MONTANA	TAYLOR, J.	80539102	CONT	78/07/07	$41,300
MONTANA STATE UNIV. BOZEMAN	AMMONIA TOXICITY TO FISHES	THURSTON, R.V.	80563601	INCR	78/09/11	$27,300
MONTANA STATE UNIV. BOZEMAN	EVALUATION OF SURFACE & GROUND WATER PROBLEMS ASSOCIATED WITH STRIP MINE SITES: PHASE II	WILLIAMS, T.	80593501	NEW	78/08/09	$450,000
MONTANA TECH. ALUMNI. FDN. BUTTE	INVESTIGATION OF NEW TECHNIQUES FOR CONTROL OF SMELTER ARSENIC BEARING WASTE	MEHTA, ARIL	80459502	INCR	78/06/27	$22,515
			80459502	INCR	78/08/21	$40,521
NORTHERN CHEYENNE TRIBAL COUNCIL LAME DEER	POTENTIAL IMPACTS TO GROUND-WATER &SURFACE-WATER QUALITY & QUAN ITY FROM PROPOSED ENERGY DEVELOPMENT	MONTEAU, R.	80356603	INCR	78/07/24	$8,000
NORTHERN CHEYENNE TRIBAL COUNCIL LAME DEER	ASSESSMENT OF THE POTENTIAL IMPACTS OF PROPOSED ENERGY DEVELOPMENT ON THE WATER RESOURCES OF THE NOR	MONTEAU, R.	80608201	NEW	78/07/25	$70,000

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APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		MONTANA				
** TRAINING **						
MONTANA ENVRN. INF. CTR. HELENA	STATEWIDE PUBLIC PARTICIPATION IN WATER QUALITY MANAGEMENT IN MONTANA	KIESLING, R.	90086301	NEW	78/07/14	$7,000
** FELLOWSHIPS **						
MONTANA ST. UNIV. BOZEMAN	CIVIL ENGINEERING	MILLS, K.	91129501	NEW	78/07/19	$3,058
MONTANA, UNIV. OF MISSOULA	WATER QUALITY	ANDERSON E.	91132601	NEW	78/09/13	$6,000
NORTHERN MONTANA COLLEGE BILLINGS	MICROBIOLOGY	KLINE, K.	91132701	NEW	78/09/15	$3,244

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		N E B R A S K A				
** TRAINING **						
NEBRASKA, UNIV. OF (KUON-TV) LINCOLN	STATEWIDE PUBLIC PARTICIPATION IN WATER QUALITY MANAGEMENT IN NEBRASKA	FOWLER, J.	90081701	NEW	78/06/23	87,000

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		N E V A D A				
** RESEARCH **						
NEVADA MENTAL HEALTH INST. RENO	CHROMOSOME STUDIES IN HUMAN SUBJECTS EXPOSED TO ARSENIC	VIG, B.	80566501	NEW	78/04/26	$32,161
NEVADA, UNIV. OF LAS VEGAS	REMOTE SENSING TO DETERMINE HORIZONTAL DISTRIBUTION OF CHLOROPHYLL & SURFACE CURRENTS LAS VEGAS BAY	DEACON, J.	80504501	INCR	78/04/10	$4,982

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		N E W H A M P S H I R E				
** DEMONSTRATION **						
A. C. LAWRENCE LEATHER CO. WINCHESTER	DEMONSTRATION OF A PROCESS TO MEET BEST AVAILABLE TREATMENT STANDARDS FOR CHROME TANNERY WASTES	BARBER, L.K.	80450401	INCR	78/09/28	$99,000
** TRAINING **						
NEW HAMPSHIRE MUNICIPAL ASSOC. CONCORD	STATEWIDE PUBLIC PARTICIPATION IN WATER QUALITY MANAGEMENT IN NEW HAMPSHIRE	MCCORMACK, K.	90081601	NEW	78/06/21	$7,000
** FELLOWSHIPS **						
NEW HAMPSHIRE, UNIV. OF DURHAM	CHEMICAL ENGRNG.	DRIESSEN, A.	91116501	NEW	78/07/17	$3,780

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		N E W J E R S E Y				
** RESEARCH **						
NEW JERSEY DEPT. OF ENVRN. PROTECTION TRENTON	SURVEY OF THE USE & EMISSION OF SELECTED CARCINOGENS IN NEW JERSEY	PREUSS, P.	80550101	INCR	78/08/23	$55,000
NEW JERSEY INST. OF TECH. NEWARK	DETERMINATION OF TOXIC VOLATILE ORGANICS IN AMBIENT AIR	BOZZELLI, J.	80627101	NEW	78/09/11	$49,574
NEW JERSEY INST. OF TECH. FDN. NEWARK	MODIFIED WET SCRUBBING OF IMMISCIBLES EMITTED FROM MANUFACTURE & PROCESSING OF ORGANIC PRODUCTS	CHEREMISINOFF, P. N.	80445501	INCR	78/04/26	$50,000
NEW JERSEY INST. OF TECH. FDN. NEWARK	REMOVAL & RECOVERY OF FLUOBORATES FROM ELECTROPLATING WASTEWATER	LISKOWITZ, J.	80471001	INCR	78/09/28	$25,000
PRINCETON, UNIV. OF PRINCETON	MICROBIAL CONVERSIONS OF DELETERIOUS MOLECULES: KINETIC MODELS FOR AQUATIC ENVIRONMENT	OLLIS, DAVID	80620801	NEW	78/08/09	$70,000
RUTGERS, STATE UNIV. NEW BRUNSWICK	QUANTITATION OF DESORPTION & RECOVERY OF VIABLE BACTERIA FROM SEDIMENT	LITCHFIELD, C.	80486503	CONT	78/09/20	$34,933
RUTGERS, STATE UNIV. NEW BRUNSWICK	PAN CONCENTRATION IN AMBIENT AIR IN NEW JERSEY	BRENNAN, E.	80582701	NEW	78/04/10	$11,154
RUTGERS, STATE UNIV. PISCATAWAY	OIL SLICK DISPERSAL MECHANICS	AHLERT, R.	80590101	NEW	78/07/[illegible]	$25,000
RUTGERS, STATE UNIV. NEW BRUNSWICK	INVESTIGATION OF FACTORS INVOLVED IN ADAPTATION OF WOODY SPECIES TO CONDITIONS OF COMPLETED REFUSE L	FLOWER, F.	80590701	NEW	78/05/17	$30,000
RUTGERS, STATE UNIV. NEW BRUNSWICK	ROLE OF FRESHWATER TIDAL WETLANDS IN ASSIMILATION OF NON-PROFIT SOURCE URBAN RUNOFF	GOOD, R.	80590801	NEW	78/09/18	$40,287

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		NEW JERSEY				
** RESEARCH ** TEXTILE RES. INST. PRINCETON	STUDIES OF DUST CAKE FORMATION & STRUCTURE IN FABRIC FILTRATION	MILLER, R	80492603	CONT	78/08/04	$67,900
** TRAINING ** NEW JERSEY CONS. FDN. MORRISTOWN	TOXIC SUBSTANCE PUBLIC PARTICIPATION PILOT PROGRAM FOR N.J. MEDIA OUTREACH	CAPUTO, D.	90089501	NEW	78/09/19	$8,000
NEW JERSEY ENV. COMMISSIONS, ASSOC. OF MENDHAM	STATEWIDE PUBLIC PARTICIPATION IN WATER QUALITY MANAGEMENT IN NEW JERSEY	ASHMUN, C.	90081301	NEW	78/06/27	$7,000
NEW JERSEY LEAGUE OF WOMEN VOTERS MONTCLAIR	TOXIC SUBSTANCES PUBLIC PARTICIPATION PILOT PROJECT	BOEHME, C.	90089401	NEW	78/09/19	$3,000
NEW JERSEY PUBLIC INTEREST GROUP TRENTON	TOXIC SUBSTANCES PUBLIC PARTICIPATION PILOT PROJECT OF NEW JERSEY	MILLINGER, M.	90089601	NEW	78/09/19	$8,000
NEW JERSEY, ASSOC. OF ENVRN COMM. MORRISTOWN	LOCAL ACTION TRAINING PROGRAM	KIM, YOUNG	90086701	NEW	78/09/19	$97,500
NEW JERSEY, ENVRN COMM., ASSOC. OF MENDHAM	TOXIC SUBSTANCE PUBLIC PARTICIPATION PILOT PROJECT OFR NEW JERSEY	WILSON, J.	90089001	NEW	78/09/19	$24,450
RUTGERS ST. UNIV. NEW BRUNSWICK	AIR RESOURCES MANAGEMENT AND TRAINING PROGRAM	KAPLOVSKY A.	90082501	NEW	78/07/17	$64,169
** FELLOWSHIPS ** NEW JERSEY INST. OF TECH. NEWARK	CIVIL AND ENVIRONMENTAL ENGINEERING	BOEHLE, W.	91125701	NEW	78/06/23	$2,618

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		N E W M E X I C O				
** RESEARCH **						
NEW MEXICO INST. OF MINING & TECH. SOCURRO	IRRIGATION RETURN FLOW SALINITY CONTROL IN THE MIDDLE RIO GRANDE OF NEW MEXICO MONITORING, MODELING	GELHAR, L.	80609201	NEW	78/07/25	$314,398
NEW MEXICO, UNIV. OF ALBUQUERQUE	A PROPOSAL TO ASSESS METAL ION POLLUTION OF GROUNDWATER AS A CONSEQUENCY OF UNDERGROUND COAL GASIFIC	WALTERS, E.	80630301	NEW	78/09/11	$25,000
** TRAINING **						
NEW MEXICO ST. UNIV. LAS CRUCES	TRAINING IN ENGINEERING ASPESTS OF WATER	BARKLEY, W.	90092001	NEW	78/09/19	$31,950

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		N E W Y O R K				
** RESEARCH **						
AMERICAN SOCIETY OF CIVIL ENGRS. NEW YORK	DEVELOPMENT OF A TENTATIVE STANDARD FOR EVALUATING OXYGEN TRANSFER	MORGAN, R.	80586801	INCR	78/08/14	$35,000
BOYCE THOMPSON INST. YONKERS	RESPONSE OF PLANTS TO AIR POLLUTANTS	MCCUNE, D.	80451303	CONT	78/04/26	$30,000
CLARKSON COLLEGE OF TECH POTSDAM	KINETIC STUDIES OF DECOMPOSITION AND NUTRIENT REGENERATION OF GREAT LAKES PHYTOPLANKTON	DEPINTO, J.	80493702	CONT	78/09/18	$50,000
COLORADO UNIV. GENEVA	STRATEGY OF INSECT CONTROL USING MATING DISRUPTION	ROELOFS, W.	80363403	CONT	78/07/31	$57,818
COLUMBIA UNIV. NEW YORK	ENZYMATIC CHARACTERIZATION OF METABOLIC ACTIVATION AND DNA BINDING OF PRESUMPTIVE CARCINOGENS IN SHO	WEINSTEIN, I. B.	80548202	CONT	78/08/14	$100,035
CORNELL UNIV. ITHACA	NATIONAL STATISTICAL ASSESSMENT OF DOMESTIC RURAL WATER	FRANCIS, J. D.	80490001	INCR	78/05/19	$10,800
			80490001	INCR	78/09/11	$15,389
CORNELL UNIV. ITHACA	EFFECTIVENESS OF SOIL & WATER CONSERVATION PRACTICES FOR POLLUTION CONTROL	LOEHR, RAYMOND C.	80492501	INCR	78/09/06	$169,962
CORNELL UNIV. ITHACA	RISK ASSESSMENT METHODOLOGY FOR SLUDGE MANAGEMENT DECISIONS	JUTRO, P.	80578101	NEW	78/04/24	$124,596
CORNELL UNIV. ITHACA	RESOURCE CONSERVATION AND UTILIZATION IN ANIMAL WASTE MANAGEMENT	LOMER, R.	80614001	NEW	78/07/07	$119,840

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		N E W Y O R K				
** RESEARCH **						
DUDLEY OBSERVATORY LATHAM	FIELD INSTRUMENTATION FOR REAL-TIME MONITORING OF DUST IN THE AIR	PATASHNICK, H.	80522202	CONT	78/09/14	$24,000
HUNTER COLLEGE OF CUNY NEW YORK	CASE-CONTROL STUDY OF GASTROINTESTINAL-URINARY TRACT CANCER MORTALITY IN RELATION TO DRINKING WATER	KUPCHIK, G.	80525401	INCR	78/05/31	$2,502
INTERNATIONAL ASSOC. WATER POLL. RES. ITHACA	NINTH INTERNATIONAL CONFERENCE ON WATER POLLUTION RESEARCH	DICK, R.	80575601	NEW	78/05/19	$43,300
MANHATTAN COLLEGE BRONX	MATHEMATICAL MODELS OF FATES OF POLLUTANTS IN ESTUARIES	O'CONNOR, D.	80456303	CONT	78/05/17	$140,027
MANHATTAN COLLEGE BRONX	MODELING OF TOXIC SUBSTANCES IN GREAT LAKES FOOD CHAINS	THOMANN, R.	80591601	NEW	78/05/26	$142,180
NEW YORK HEALTH RES., INC. ALBANY	STRATOSPHERIC OZONE IN URBAN AIR	PARHAM, T.	80591301	NEW	78/04/26	$40,929
NEW YORK ST. DEPT OF ENVRN CONSRV ALBANY	FUEL ECONOMY & EMISSIONS PERFORMANCE OF DIESEL AUTOMOBILES	GIBBS, R.	80593401	NEW	78/08/09	$124,000
NEW YORK ST. ENERGY RES. AND DEV. ALBANY	ENVIRONMENTAL ASSESSMENT OF COAL WASTE IN OCEAN WATERS	WILSON, S.	80634101	NEW	78/09/18	$100,000
NEW YORK ST. HLTH RES. ALBANY	VIRUS-SOIL INTERACTIONS	PARHAM, T.	80474302	CONT	78/09/18	$100,000
NEW YORK STATE DEPT. OF ENVR. CONSR. ALBANY	VERTICAL DISTRIB. OF HYDROCARBONS IN AN ATMOSPH. DURING CONDITION OF LOW LEVEL TEMPERATURE INVERSION	WHITBY, R.	80532701	INCR	78/08/21	$15,000

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APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		N E W Y O R K				
** RESEARCH **						
NEW YORK STATE DEPT. OF ENVR. CONSR. ALBANY	ATMOSPHERIC TURBULENCE AND POLL. DISPERSION NEAR ROADWAYS	TRIVIKRAMA, R.	80601701	NEW	78/06/12	$54,980
NEW YORK STATE DEPT. OF HLTH. ALBANY	COMPARATIVE KINETIC STUDIES OF NUTRIENT UPTAKE AND GROWTH IN THE GREAT LAKES PHYTOPLANKTON	PARHAM, T.	80468903	CONT	78/06/19	$75,000
NEW YORK STATE DEPT. OF HLTH. ALBANY	EFFECTS OF POLYCHLORINATED BIPHENYLS ON GREAT LAKES PHYTOPLANKTON	PARHAM, T.	80612601	NEW	78/07/25	$160,000
NEW YORK STATE UNIV. ALBANY	SAMPLING CHARACTERIZATION AND ANALYSIS MANUAL FOR DREDGE AND FILL MATERIAL	SWEENEY, R.	80557201	INCR	78/09/11	$100,000
NEW YORK UNIV. NEW YORK	CONTINUOUS TWIN SCREW ACID HYDROLYSIS REACTOR DEVEL. AND OPTIMIZATION FOR ONE TON/DAY WASTE CELLULOS	BRENNER, M.	80523902	CONT	78/07/10	$315,000
NEW YORK, ST. UNIV. COLLEGE ALBANY	CHARACTERIZATION OF DREDGED MATERIALS DISPOSAL AREAS IN THE G.L.	SWEENEY, R.	80588501	NEW	78/04/12	$150,000
NEW YORK, ST. UNIV. OF ALBANY	COST BENEFIT OF FUEL REPROCESSING	RESNIKOFF, M.	80494801	INCR	78/07/07	$9,909
NEW YORK, STATE UNIV. OF ALBANY	IMPACT OF ZOOPLANKTON GRAZING UPON PHYTOPLANKTON IN EUTROPHIC SAGINAW BAY AND WESTERN LAKE ERIE	MCNAUGHT, D.	80457302	INCR	78/05/26	$78,622
NEW YORK, UNIV. OF ALBANY	ASSESSMENT OF IMPACT OF POLLUTION CONTROL ON EUTROPHICATION OF EASTERN BASIN OF LAKE ERIE	SWEENEY, R. A.	80465801	INCR	78/04/10	$50,000
RENSSELAER POLYTECHNIC INST. TROY	MODELING TRANSPORT AND BEHAVIOR OF PESTICIDES AND OTHER TOXIC ORGANIC MATERIALS IN AQUATIC ENVIRONME	PARK, R.	80482003	CONT	78/08/21	$146,400

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		N E W Y O R K				
** RESEARCH **						
ROCKEFELLER UNIV. NEW YORK	MARINE PROTOZOAN MICROSOMAL ACTIVATION OF OIL POLLUTANTS TO MUTAGENS	LINDMARK, D.	80536401	INCR	78/09/13	$50,000
SIERRA CLUB NEW YORK	SURVEY OF REQUIREMENTS FOR ESTABLISHING AN INTERNATIONAL ENVIRONMENTAL AFFAIRS LIBRARY	SCHARLIN-RAMBACH	80615501	NEW	78/09/22	$5,000
UNION COLLEGE SCHENECTADY	DOCUMENTATION OF SELECTED CONDITONS BEFORE-AFTER RESTORATIVE DREDGING OF COLLINS LAKE	GEORGE, C. J.	80457201	INCR	78/04/26	$34,925
** DEMONSTRATION **						
ITHACA, CITY OF ITHACA	EVALUATION OF DEEP SHAFT BIOLOGICAL WASTEWATER TREATMENT PROCESS	DINGMAN, R.	80608101	NEW	78/08/31	$350,000
NEW YORK ST. DEPT. ENV. CONS. ALBANY	RESTORATION OF HYDE PARK LAKE	BROMBERG, A.	80578601	NEW	78/06/09	$800,000
NEW YORK STATE DEPT. ENVRN. CONSERV. ALBANY	COLLINS PARK LAKE RESTORATION	METLING, LEO J.	80425001	INCR	78/04/26	$33,105
NEW YORK STATE DEPT. OF ENVRN. CONSERV ALBANY	DELAWARE PARK LAKE RESTORATION PROJECT	BERLE, P.	80425401	INCR	78/07/11	$2,228,000
** TRAINING **						
CORNELL UNIV. ITHACA	WATER QUALITY CONTROL ENGINEERING	GATES, C.	90085201	NEW	78/08/04	$30,400
ENVIRONMENTAL OPTIONS, INC., CNTR. FOR ALBANY	TOXICS SUBSTANCES PUBLIC PARTICIPATION PROGRAM-HUDSON RIVER WATERSHED	CHASE, J.	90090601	NEW	78/09/20	$37,763

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		NEW YORK				
** TRAINING **						
ERIE COMMUNITY COLLEGE ORCHARD PARK	CROSS CONNECTION CONTROL CERTIFICATION SCHOOL	DOEING, F.	90077901	NEW	78/04/03	$2,500
MANHATTAN COLLEGE BRONX	TRAINING PROFESSIONAL SPECIALISTS IN WATER POLLUTION CONTROL	JERIS,,J.	90068601	NEW	78/08/14	$17,900
NATIONAL URBAN LEAGUE, INC. NEW YORK	NATIONAL CONFERENCE ON THE URBAN ENVIRONMENT	DANELS, P.	90065601	NEW	78/07/27	$80,000
			90065601	INCR	78/09/27	$35,000
NEW YORK ENV. MGMT. COUNCILS, ASSN. OF MILLBROOK	TOXICS SUBSTANCES PUBLIC PARTICIPATION PROGRAM-HUDSON RIVER WATERSHED	HOGAN, W.	90090701	NEW	78/09/28	$3,000
NEW YORK ST ASSOC OF CONSRV COMM HAMBURG	STATEWIDE PUBLIC PARTICIPATION IN WATER QUALITY MANAGEMENT IN NEW YORK STATE	KRUG, J.	90081501	NEW	78/06/27	$7,000
NEW YORK ST. SAN ENGRS., CONF. OF TROY	PLANNING, MANAGEMENT AND EVALUATION OF STATE WATER SUPPLY PROGRAMS	THOMPSON, M.	90082201	NEW	78/06/21	$51,865
ROCHESTER INST. OF TECH. ROCHESTER	BACHELOR OF TECHNOLOGY PROGRAM IN CIVIL ENGINEERING TECHNOLOGY	HU, A.	90091001	NEW	78/09/18	$35,000
SIERRA CLUB NEW YORK	COORDINATION OF NATIONAL CELEBRATION OF WORLD ENVIRONMENT DAY 1978	LACKNER, M.	90080201	NEW	78/05/17	$3,500
** FELLOWSHIPS **						
ALBANY MEDICAL COLL. ALBANY		SCHREIBER, J.	91129001	NEW	78/08/02	$2,333

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		N E W Y O R K				
** FELLOWSHIPS **						
COLUMBIA UNIV. NEW YORK	ECONOMICS	TUCHMAN, B.	91121601	NEW	78/07/03	$3,027
MANHATTAN COLLEGE BRONX	ENVIRONMENTAL SCI AND ENGR	AURRICHIO, P.	91133001	NEW	78/08/31	$1,330
NEW YORK POLYTECHNIC INST. BROOKLYN	M.S./ENVRN. HEALTH SCIENCE	CASHMORE, P.	91108901	INCR	78/07/13	$1,285
NEW YORK POLYTECHNIC INST. BROOKLYN		KNAPP, D.	91131901	NEW	78/09/11	$3,709
NEW YORK STATE, UNIV. OF STONY BROOK	ENVIRONMENTAL ENGR	GEORGE, P.	91116201	NEW	78/07/13	$1,327
NEW YORK, ST. UNIV. COLL. OF BUFFALO	ENVIRONMENTAL QUALITY	NAPIERSKI, D. MONITORING & ASSESSMENT	91124001	NEW	78/07/17	$6,000
NEW YORK, ST. UNIV. OF BUFFALO		DE JESUS, H.	91124101	NEW	78/07/24	$6,000
NEW YORK, UNIV. OF SYRACUSE	CIVIL ENGR	CUMPIANO, G.	91127301	NEW	78/08/14	$4,300
RENSSELAER POLY INST. TROY	GEOLOGY	MURRAY, S.	91131601	NEW	78/08/17	$6,000

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		N E W Y O R K				
** FELLOWSHIPS **						
RENSSELAER POLY. INST. TROY	CIVIL ENGINEERING	LUPE, R.	91129701	NEW	78/07/31	$4,900
RENSSELAER POLY. INST. TROY	ENGINEERING	CUKROVANY, R.	91129801	NEW	78/07/20	$1,442
RENSSELAER POLYTECHNIC INST. TROY	ENVIRONMENTAL ENGINEERING	JASINSKI, M.	91121901	NEW	78/06/15	$6,255
RENSSELAER POLYTECHNIC INST. TROY	CIVIL ENGRNG.	FEDORIW, G.	91127701	NEW	78/07/10	$3,392
RENSSELAER POLYTECHNIC INST. TROY	CIVIL ENGRNG.	FEDORIW, M.	91127801	NEW	78/07/10	$3,392

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		NORTH CAROLINA				
** RESEARCH **						
AMERICAN TEXTILE MANUFACTURERS INST. CHARLOTTE	TECHNICAL & ECONOMIC EVALUATIONS OF BATEA GUIDELINES-TEXTILES	NILES, O'JAY	80432901	INCR	78/08/24	$131,000
DUKE UNIV. DURHAM	BIOLOGICAL ASSESSMENT OF EXPOSURE TO SULFUR DIOXIDE AND ACID SULFATE	RAJAGOPALAN, K.	80562201	INCR	78/09/11	$90,795
DUKE UNIV. DURHAM	EXCHANGE PROCESSES BETWEEN FORESTS AND THE ATMOSPHERE	KNOERR, K.	80639301	NEW	78/09/11	$17,676
EAST CAROLINA, UNIV. OF GREENVILLE	INFLUENCE OF WETLANDS ON THE METABOLIC	BRINSON, M	80586101	NEW	78/05/10	$18,134
NORTH CAROLINA STATE UNIV. RALEIGH	MECHANISM & CONTROL OF RAINFALL IMPACT FROM LAND APPLICATION SITES	WESTERMAN, P.	80460802	INCR	78/06/09	$7,631
NORTH CAROLINA STATE UNIV. RALEIGH	EFFECT OF LARGE SCALE AGRICULTURAL LAND DEVELOPMENT ON DRAINAGE WATERS	SKAGGS, R.	80477803	CONT	78/08/09	$56,610
NORTH CAROLINA STATE UNIV. RALEIGH	NON-POINT SOURCE MODELS WATERSHED INPUT FROM AREAS RECEIVING ANIMAL WASTES	OVERCASH, M. R.	80501101	INCR	78/09/06	$52,000
NORTH CAROLINA STATE UNIV. RALEIGH	STUDY AND USE OF PHOTOACOUSTIC CELLS FOR THE DETECTION OF POLLUTANT GASES & AEROSOLS	PATTY, R.	80533201	INCR	78/09/01	$15,000
NORTH CAROLINA STATE UNIV. RALEIGH	GRADUATE RESEARCH IN AIR QUALITY METEOROLOGY	SAUCIER, W.	80555401	INCR	78/08/02	$5,000
NORTH CAROLINA STATE UNIV. RALEIGH	MODELING OF ATMOSPHERIC FLOWS AND POLLUTANT DISPERSAL OVER AND AROUND HILLS AND BUILDINGS	ARYA, S.	80559502	CONT	78/08/09	$95,000

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		NORTH CAROLINA				
** RESEARCH **						
NORTH CAROLINA STATE, UNIV. RALEIGH	TEST AND EVALUATION OF A PILOT PLANT COAL GASIFIER-GAS CLEANING FACILITY	FERRELL, J.	80481102	CONT	78/08/01	$366,452
NORTH CAROLINA, RES. INST. RES TRIANGLE PRK	SYNTHETIC FUEL RESEARCH PROGRAM	MIXON, F.	80497903	CONT	78/09/06	$600,000
NORTH CAROLINA, UNIV OF CHAPEL HILL	ASSESSMENT AND CONTROL OF WASTEWATER CONTAMINANTS ORIGINATING FROM THE PRODUCTION OF SYNTHETIC FUELS	SINGER, P.	80491703	CONT	78/05/08	$334,185
			80491703	INCR	78/09/01	$5,000
NORTH CAROLINA, UNIV. OF CHAPEL HILL	EVALUATE TENTATIVE STANDARD METHODS FOR ENTERIC VIRUS CONCENTRATION & DETECTION IN DRINKING WATER	SOBSEY, M.	80421803	INCR	78/05/04	$2,587
NORTH CAROLINA, UNIV. OF CHAPEL HILL	DEV. OF AN ON-LINE INFRARED SPECTRAL SEARCH SYS. UTILIZING PATTERN RECOGNITION & INFORM THEORY	ISENHOUR, T.	80438102	INCR	78/07/10	$55,000
			80438102	INCR	78/08/21	$21,000
NORTH CAROLINA, UNIV. OF CHAPEL HILL	CHLORINATION OF AQUATIC HUMIC SUBSTANCES	CHRISTMAN, R.	80443003	CONT	78/08/09	$117,057
NORTH CAROLINA, UNIV. OF CHAPEL HILL	EFFECT OF ETIOLOGICALLY DEFINED RESPIRATORY INFECTIONS ON LUNG FUNCTIONS AND ITS GROWTH IN AN AREA	COLLIER, A.	80457703	CONT	78/07/25	$175,000
NORTH CAROLINA, UNIV. OF CHAPEL HILL	EFFECT OF VIRUS PARTICLE AGGREGATION ON THE DISINFECTION OF WATER SUPPLIES	SHARP, G.	80463503	CONT	78/07/21	$118,924

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		NORTH CAROLINA				
** RESEARCH **						
NORTH CAROLINA, UNIV. OF CHAPEL HILL	DETECTION OF CARCINOGENICITY OF OILS IN SEA WATER	HUMM, D.	80465003	CONT	78/08/17	$47,000
NORTH CAROLINA, UNIV. OF CHAPEL HILL	CARBON MONOXIDE AND ACCELERATED ATHEROSCLEROSIS	BRINKHOUS, K. M.	80495902	INCR	78/09/22	$26,819
NORTH CAROLINA, UNIV. OF CHAPEL HILL	NEW APPROACHES TO QUANTITATING THE PULMONARY EFFECTS OF INHALED POLLUTANTS	BROMBERG, P.	80518402	CONT	78/07/25	$174,001
NORTH CAROLINA, UNIV. OF CHAPEL HILL	EXPERIMENTAL STUDY OF AEROSOL FORMATION MECHANISMS IN A CONTROLLED ATMOSPHERE	FOX, D.	80607001	NEW	78/07/24	$55,000
			80607001	INCR	78/08/21	$14,997
NORTH CAROLINA, UNIV. OF CHAPEL HILL	POTENTIAL ENVIRONMENT HAZARDS OF PESTICIDAL VIRUSES	ENG-SHANG, HUANG	80621001	NEW	78/08/16	$77,016
NORTH CAROLINA, UNIV. OF CHAPEL HILL	OUTDOOR SMOG CHAMBER EXPERIMENTS TO TEST PHOTOCHEMICAL MODELS	JEFFRIES, H.	80584301	NEW	78/04/10	$60,000
RESEARCH TRIANGLE INSTITUTE RES TRIANGLE PRK	RESEARCH IN ELECTROSTATIC PRECIPITATORS FOR PARTICULATE CONTROL	RANADE, M.	80589701	NEW	78/05/04	$238,790
SAINT AUGUSTINE COLLEGE RALEIGH	LIFE SPAN EFFECTS OF LOW LEVEL HTO EXPOSURE DURING PREGNANCY IN RATS	JOHNSON, W.	80376403	INCR	78/08/24	$28,865
** DEMONSTRATION **						
LAKE LURE, TOWN OF LAKE LURE	MYSTIC LAKE RESTORATION PROJECT	WILSON, J.	80569101	INCR	78/04/20	$1,080

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		NORTH CAROLINA				
** TRAINING **						
NORTH CAROLINA, UNIV. OF CHAPEL HILL	TRAINING IN WATER QUALITY MANAGEMENT	WEISS, C.	90085101	NEW	78/07/07	$31,650
** FELLOWSHIPS **						
DUKE UNIV. DURHAM	CIVIL ENGINEERING	HARRISON, R.	91132801	NEW	78/09/13	$6,000
NORTH CAROLINA ST. UNIV. RALEIGH	ENGINEERING	HEAVENER, M.	91121501	NEW	78/07/07	$6,000
NORTH CAROLINA, UNIV. OF CHAPEL HILL	ENVIRONMENTAL PLANNING	MORRIS, C.	91120301	NEW	78/06/15	$5,185
NORTH CAROLINA, UNIV. OF CHAPEL HILL	CIVIL ENGINEERING	DEMKE, K.	91126701	NEW	78/07/13	$6,000

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APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
	NORTH DAKOTA					
** TRAINING **						
NORTH DAKOTA WILDLIFE FEDERATION BISMARCK	STATEWIDE PUBLIC PARTICIPATION WATER QUALITY MANAGEMENT IN NORTH DAKOTA	HADBALL, R.	90004701	NEW	78/06/27	67,000

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		O H I O				
** RESEARCH **						
BATTELLE MEM. INST./COLUMBUS LAB. COLUMBUS	TECHNICAL AWARENESS IN THE NONFERROUS METALS INDUSTRY PILOT STUDY	CHERRY, R. H.	80509501	INCR	78/05/15	$43,310
BATTELLE MEM. INST./COLUMBUS LAB. COLUMBUS	DEVELOPMENT OF A MODEL OF SO2 OXIDATION IN SMOG	MILLER, D.	80533501	INCR	78/07/25	$85,000
BATTELLE MEM. INST./COLUMBUS LAB. COLUMBUS	KINETICS & MECHANISMS OF NITRATE FORMATION IN PHOTOCHEMICAL SMOG	SPICER, C.	80581201	NEW	78/04/06	$60,000
BEDWAY COAL CO. ADENA	LIMESTONE TREATMENT OF ACID SPOIL	BEDWAY, J.	80593601	NEW	78/07/21	$55,335
CHILDREN'S HOSPITAL RES FDN COLUMBUS	A LONGITUDINAL EVALUATION OF LEAD BODY BURDEN IN GROWING CHILDREN	LUBIN, HAROLD	80416803	CONT	78/09/13	$256,361
CINCINNATI INSTITUTE CINCINNATI	OHIO RIVER VALLEY HERITAGE RES. PROJECT	COLEMAN, E.	80613201	NEW	78/05/22	$50,000
CINCINNATI, CITY OF CINCINNATI	FEASIBILITY STUDY OF GRANULAR ACTIVATED CARBON ADSORPTION AND ON SITE REGENERATION	MILLER, R.	80544301	INCR	78/05/04	$1,178,625
			80544301	INCR	78/08/16	$287,497
CINCINNATI, UNIV. OF CINCINNATI	DETECTION, OCCURENCE, CHARACTERIZATION, AND PERSISTENCE OF MICROBES IN LANDFILL LEACHATES	SCARPINO, P.	80473302	CONT	78/08/21	$91,091
CINCINNATI, UNIV. OF CINCINNATI	IN VIVO METHODS FOR ASSESSING NEUROTOXICITY	BORNSCHEIN, R.	80569301	NEW	78/05/31	$66,000

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		O H I O				
** RESEARCH **						
CINCINNATI, UNIV. OF CINCINNATI	MECHANISMS OF INTESTINAL CADMIUM ABSORPTION IN RATS	FOULKES, E.	80584001	NEW	78/04/26	$50,316
CINCINNATI, UNIV. OF CINCINNATI	NEW INERTIAL PARTICLE-SIZE CLASSIFICATION TECHNIQUES FOR SOURCE EVALUATIONS	WILLEKE, K.	80597101	NEW	78/08/31	$29,326
CINCINNATI, UNIV. OF CINCINNATI	EFFECT OF PARTICULATES ON DISINFECTION OF ENTEROVIRUSES IN WATER BY CHLORAMINES	SCARPINO, P.	80624001	NEW	78/09/18	$87,589
CINCINNATI, UNIV. OF CINCINNATI	MUTAGENESIS AND CARCINOGENESIS CHARACTERIZATION OF ORGANICS IN DRINKING WATER	LOPER, J.	80557601	INCR	78/08/09	$30,913
CUYAHOGA COUNTY COMM., BD. OF CLEVELAND	CUYAHOGA COUNTY CENTRALIZED MANAGEMENT AND INSTRUMENTATION, MONITORING AND PROCESS CONTROL STUDY	SEBESTA, S.	80633301	NEW	78/09/18	$176,369
HEIDELBERG COLLEGE TIFFIN	FLUVIAL TRANSPORT & PROCESSING OF SEDIMENTS & NUTRIENTS FROM NONPOINT SOURCES	BAKER, D.	80543601	INCR	78/08/09	$33,000
MIAMI UNIVERSITY OXFORD	CHRONIC BIOASSAYS WITH DAPHNIDS AS A TOOL FOR PREDICTING THE TOXICITY OF COMPLEX INDUSTRIAL EFFLUENT	WINNER, R.	80519302	CONT	78/04/11	$21,564
NATIONAL WATER WELL ASSOC. WORTHINGTON	MANUAL OF WATER WELL MAINTENANCE AND REHABILITATION TECHNOLOGY	LEHR, JAY	80521102	CONT	78/07/07	$108,152
NATIONAL WATER WELL ASSOC. WORTHINGTON	DEVELOPMENT OF NATIONAL LIBRARY CENTER FOR WATER WELL TECHNOLOGY	LEHR, J.	80586301	NEW	78/04/07	$100,000
OHIO AGR. RESEARCH CNTR. WOOSTER	ANIMAL WASTE MGMT. CONFERENCE & WORKSHOP	WHITE, R.	80602501	NEW	78/05/17	$35,340

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		O H I O				
** RESEARCH **						
OHIO AGRICULTURAL RES. & DEV. CTR. WOOSTER	EFFECT OF LIVESTOCK PASTURING ON NON-POINT SURFACE RUNOFF	WHITE, R.	80463103	CONT	78/07/07	$96,813
OHIO STATE UNIV. COLUMBUS	EFFECTS/SIZED ASBESTOS FIBERS ON CELLULAR DNA MEMBRANE STRUCTURE-FUNCTION, INTERMEDIARY METHABOLISM	HART, R.	80420102	INCR	78/05/04	$87,597
OHIO STATE UNIV. COLUMBUS	LIMNOLOGICAL INVESTIGATION OF WATER QUALITY AND FISH LARVAE IN LAKE ERIE	HERNDENDORF, C.	80461202	INCR	78/05/10	$48,975
OHIO STATE UNIV. COLUMBUS	APPLICATION OF FOURIER TRANSFORM SPECTROSCOPY TO AIR POLLUTION PROBLEMS	SHAW, J.	80486803	INCR	78/08/07	$87,459
OHIO STATE UNIV. COLUMBUS	CHLORINATED HYDROCARBONS: INSECTICIDE VS. CANCINOGENIC ACTION	HART, R.	80500802	CONT	78/06/15	$49,962
OHIO STATE UNIV. COLUMBUS	CLINICAL PHARMACOLOGY & TOXICOLOGY OF CHLORINE DIOXIDE-ANIMAL & HUMAN VOLUNTEERS	BIANCHINE, J.	80544301	NEW	78/06/27	$552,038
OHIO STATE UNIV. COLUMBUS	WATER REUSE, RECYCLING, & TREATMENT SYSTEMS IN INTEGRATED STEEL PLANTS	ST. PIERRE, G.	80620001	NEW	78/08/31	$52,836
OHIO STATE UNIV. RES. FDN. COLUMBUS	LIMNOLOGICAL INVESTIGATIONS OF WATER QUALITY AND FISH LARVAE IN LAKE ERIE	HERNDENDORF, C.	80461203	CONT	78/06/09	$113,592
OHIO STATE UNIV. RES. FDN. COLUMBUS	DEVELOPMENT OF A TISSUE SELECTIVE IN VIVO MICROASSAY FOR ENVRN. AGENTS PRODUCING DNA DAMAGE	HART, D.	80533701	INCR	78/04/10	$352,331
OHIO UNIV. ATHENS	AUTOMATED MEASUREMENTS OF THE INFRARED SPECTRA OF CHROMATOGRAPHICALLY SEPARATED MATERIALS	GRIFFITHS, P.	80433302	INCR	78/05/31	$10,000

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APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		O H I O				
** RESEARCH **						
WOOSTER, COLLEGE OF, THE WOOSTER	INVESTIGATION OF THE EFFECTS OF COAL-FIRED POWER PLANT EMISSIONS ON TISSUE STRUCTURE OF SELECTED BIR	KERN, M.	80537002	CONT	78/05/31	$27,000
** TRAINING **						
CINCINNATI, UNIV. OF CINCINNATI	GRADUATE TRAINING IN AIR POLLUTION	PATTISON, J.	90068402	CONT	78/07/24	$61,166
CINCINNATI, UNIV. OF CINCINNATI	WATER POLLUTION CONTROL PROFESSIONAL TRAINING GRANT	FOWLER, THADDEUS N.	90069901	INCR	78/06/15	$19,222
CINCINNATI, UNIV. OF CINCINNATI	GRADUATE TRAINING IN WATER POLLUTION CONTROL	EYE, J.	90085801	NEW	78/07/20	$16,300
OHIO ENVIRONMENTAL COUNCIL COLUMBUS	CONFERENCE: HAZARDOUS WASTE MGMT. IN THE STATE OF OHIO	SATTERTHWAITE, B.	90078701	INCR	78/08/08	$910
OHIO ST. UNIV. COLUMBUS	INFORMATION COLLECTION, ANALYSIS AND DISSEMINATION (EPA)	HONE, R.	90071002	CONT	78/09/13	$90,000
TOLEDO, UNIV. OF TOLEDO	PROFESSIONAL TRAINING SPONSORED BY USEPA AT THE UNIVERSITY OF TOLEDO	BENNETT, G.	90083501	NEW	78/07/24	$13,200
** FELLOWSHIPS **						
CINCINNATI, UNIV. OF CINCINNATI	MS/ENV. ENG.	SWYGERT, C.	91123701	INCR	78/07/31	$1,870
			91123701	NEW	78/07/10	$4,130

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APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		O K L A H O M A				
** RESEARCH **						
EAST CENTRAL OKLAHOMA STATE UNIV. ADA	DISSEMINATION OF INFORMATION CONCERNING ANIMAL PRODUCTION EFFECTS ON ENVIRONMENTA QUALITY	ROWE, M.	80515102	INCR	78/08/02	$49,909
OKLAHOMA STATE DEPT. OF HEALTH OKLAHOMA CITY	ADVANCED BIOLOGICAL TREATMENT (AQUACULTURE) OF MUNICIPAL WASTEWATERS	HALL, D.	80370301	INCR	78/08/17	$67,355
OKLAHOMA STATE UNIV. STILLWATER	BIO-ORGANIC INDICATORS OF GROUND-WATER POLLUTION	MORRILL, L.	80461303	CONT	78/08/04	$149,653
OKLAHOMA STATE UNIV. STILLWATER	PROJECT TO DEVELOP AND EVALUATE AN ENVRN. TECH. TRANSFER SYSTEM	FITE, R.	80484702	INCR	78/04/11	$56,720
OKLAHOMA STATE UNIV. STILLWATER	EFFECTIVENESS&COST OF ACTIVE CARBON ADSORPTION OF TOXIC COMPOUNDS FROM PETROLEUM REFINERY WASTEWATER	BURKS, S.	80530701	INCR	78/06/27	$21,927
OKLAHOMA STATE UNIV. STILLWATER	POLYNUCLEAR AROMATIC COMPOUNDS - SYNTHESIS & PURIFICATION	EISENBRAUN, E.	80541902	CONT	78/05/15	$40,000
OKLAHOMA, UNIV. OF OKLAHOMA CITY	EFFECTS OF CHOLORDIMEFORM ON VASCULAR TISSUE	ROBINSON, C.	80497502	CONT	78/06/12	$33,339
TULSON, UNIV. OF TULSA	ENVIRONMENTAL ASSESSMENT FOR PETROLEUM REFINING	MANNING, F. S.	80509901	NEW	78/08/07	$80,904
** DEMONSTRATION **						
INTER-TRIBAL COUNCIL, INC. CLAREMORE	LAND RECLAMATION DEMONSTRATION PROGRAM	WEBSTER, M.	80619101	NEW	78/06/14	$1
** TRAINING **						
NATIONAL RURAL WATER ASSOC. DUNCAN	STATE RURAL WATER TRAINING AND TECHNICAL ASSISTANCE PROGRAMS	MONTGOMERY, J.	90082601	NEW	78/05/30	$99,824

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APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		O K L A H O M A				
** TRAINING **						
			90082601	INCR	78/06/20	$99,824
			90082601	INCR	78/07/28	$99,824
			90082601	INCR	78/08/31	$152,825
OKLAHOMA ACADEMY OF SCIENCE WEATHERFORD	STATEWIDE PUBLIC PARTICIPATION IN WATER QUALITY MANAGEMENT IN OKLAHOMA	LOVELL, J.	90083001	NEW	78/06/27	$7,000
OKLAHOMA ST. UNIV. STILLWATER	TRAINING IN WATER POLLUTION CONTROL AND WATER SUPPLY	GAUDY, A.	90084501	NEW	78/07/21	$17,350
** FELLOWSHIPS **						
OKLAHOMA, UNIV. OF OKLAHOMA CITY	HUMAN ECOLOGY & ENVIRONMENTAL HEALTH	RHODES, K.	91125601	NEW	78/07/13	$6,000

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		OREGON				
** RESEARCH **						
CLATSKANIE, CITY OF CLATSKANIE	JOINT DRY WET WEATHER TREATMENT OPTIMIZATION	WHEELER, R.	80600301	NEW	78/05/31	$48,000
OREGON GRAD. CTR. FOR STUDY & RES. BEAVERTON	THE CONTINUOUS MONITORING OF PARTICULATE SULFUR COMPOUNDS BY FLAME PHOTOMETRY	HUNTZICKER, JAMES J.	80475002	INCR	78/08/21	$5,000
OREGON GRAD. CTR. FOR STUDY & RES. BEAVERTON	AEROSOL CARBON TRENDS ACROSS THE UNITED STATES	HUNTZICKER, J.	80627401	NEW	78/08/21	$40,000
OREGON HEALTH SCIENCE CNTR., UNIV. OF PORTLAND	NEOPLASIA DIST. & RADIOEMISSION DENSITY IN PORTLAND METRO AREA	MORTON, W.	80583201	NEW	78/06/15	$55,983
OREGON ST. UNIV. CORVALLIS	UTILIZATION OF INDIGENOUS POPULATIONS OF BIVALVE MOLLUSKS FOR MONITORING, SURVEILLANCE, AND ASSESSIN	MIX, M.	80622401	NEW	78/08/16	$50,333
OREGON STATE UNIV. CORVALLIS	LABORATORY DETERMINATION OF CHLORAMINE CONCENTRATIONS SAFE FOR AQUATIC LIFE	WARREN, CHARLES E.	80228603	INCR	78/09/06	$25,000
OREGON STATE UNIV. CORVALLIS	EFFECTS OF COMPOUNDS PRODUCED FROM PETROLEUM UTILIZATION ON SELECTED MARINE INVERTEBRATES	MIX, M.	80442702	INCR	78/08/11	$19,900
OREGON STATE UNIV. CORVALLIS	TRANSITION ZONE VEGETATION BETWEEN INTERTIDAL MARSH & UPLAND IN OREGON & WASHINGTON	FRENKEL, R. E.	80496301	INCR	78/07/25	$1,722
OREGON STATE UNIV. CORVALLIS	ENVIRONMENTAL CONTAMINANTS: EFFECTS ON TUMOR GROWTH AND IMMUNITY	KOLLER, L.	80521002	CONT	78/07/25	$77,382
OREGON STATE UNIV. CORVALLIS	EFFECT OF ENVIRONMENTAL POLLUTANTS ON THE SUSCEPTIBILITY OF SALMONID FISH TO VIRAL AND BACTERIAL PAT	METRICK, F.	80540702	CONT	78/09/18	$32,500

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		OREGON				
** RESEARCH **						
OREGON STATE UNIV. CORVALLIS	PLANS FOR INVESTIGATION OF NONSTEADY STATE PHENOMENA OF STREAM SEDIMENTATION	WARREN, C.	80542301	INCR	78/07/13	$36,050
			80542301	INCR	78/09/27	$10,000
OREGON STATE UNIV. CORVALLIS	LABORATORY INVESTIGATIONS OF DIFFUSION & FUMIGATION INTO THE MIXED LAYER	DEARDORFF, J.	80591201	NEW	78/06/09	$46,869
OREGON STATE UNIV. CORVALLIS	MORPHOLOGICAL AND ANATOMICAL RESPONSES OF SELECTED COASTAL MARSH PLANTS TO SOIL MOISTURE FOR THE DET	RICKSON, F.	80601301	NEW	78/07/07	$38,477
OREGON STATE UNIV. CORVALLIS	EFFECTS OF SEDIMENT-TROPHIC INTERACTIONS ON STREAM COMMUNITIES	ANDERSON, N.	80608701	NEW	78/07/20	$26,477
OREGON STATE UNIV. CORVALLIS	TEMPORAL VARIABILITY IN STREAM ECOSYSTEMS	VANSICKLE, J	80622501	NEW	78/09/18	$35,911
OREGON STATE UNIV. CORVALLIS	INTERFERENCE FROM TURBID FINISHED DRINKING WATER & DETECTION OF COLIFORM BACTERIA	SEIDLER, R.	80628701	NEW	78/09/07	$52,156
OREGON, UNIV. OF HLTH SCI CTR PORTLAND	EFFICACY OF WATER TREATMENT METHODS ON GIARDIA CYST VIABILITY	MEYER, E.	80603201	NEW	78/07/03	$48,384
** DEMONSTRATION **						
OREGON DEPT OF ENVRN QUALITY PORTLAND	EXPERIMENTAL ON-SITE SEWAGE TREATMENT AND DISPOSAL PROGRAM	RONAYNE, M.	80634901	NEW	78/09/28	$114,966
** TRAINING **						
LINN-BENTON COMM COLLEGE ALBANY	WASTEWATER TECHNOLOGY	SCOTT, P.	90089101	NEW	78/09/14	$9,602

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		OREGON				
** TRAINING **						
OREGON ED. & PUBLIC BROADCASTING SVC. PORTLAND	PUBLIC TELEVISION PROGRAM-TENTATIVE TITLE, "THE WATER CYCLE"	BRYANT, D.	90091801	NEW	78/09/19	$75,000
OREGON ENVRN. COUNCIL PORTLAND	STATEWIDE PUBLIC PARTICIPATION IN WATER QUALITY MGMT IN OREGON	HYSLOP, A.	90086401	NEW	78/07/07	$7,000
OREGON ST. UNIV. CORVALLIS	PROFESSIONAL TRAINING PROGRAM (WATER PROFESSIONAL TRAINING GRANT)	SCHROEDER, W.	90085701	NEW	78/07/24	$20,150
PORTLAND RECYCLING TEAM, INC. OREGON	HISTORY OF AN URBAN RECYCLING PROGRAM AND OPERATING A RECYCLING PROJECT MANUAL	POWELL, J.	90084901	NEW	78/06/19	$8,299

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APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		PENNSYLVANIA				
** RESEARCH **						
ACADEMY OF NATURAL SCI. PHILADELPHIA	STUDIES ON THE VALUE OF VEGETATED HABITATS AND THEIR ROLES AS NURSEY AREAS AND SHELTER FROM PREDATIO	HECK, K.	80615101	NEW	78/07/07	$48,726
AMERICAN SOCIETY FOR TESTING&MATERIALS PHILADELPHIA	CONFERENCE ON INTERNATIONAL AIR QUALITY MEASUREMENTS	LEVADIE, B.	80359303	INCR	78/05/24	$5,000
BITUMINOUS COAL RESEARCH, INC. MONROEVILLE	COAL AND THE ENVIRONMENT ABSTRACT SERIES	BOYER, J.	80533602	CONT	78/08/29	$29,682
CARNEGIE-MELLON UNIV PITTSBURGH	HEALTH EFFECTS OF AIR POLLUTION ABATEMENT	LAVE, L.	80636501	NEW	78/09/22	$39,900
DREXEL UNIV. PHILADELPHIA	SPILL ALERT DEVICE FOR IMPOUNDED HAZARDOUS MATERIALS	KOENER, ROBERT H.	80251103	INCR	78/08/02	$5,000
DREXEL UNIV. PHILADELPHIA	MICROBIOLOGICAL DRINKING WATER REGULATIONS	PIPES, W.	80563701	NEW	78/08/29	$73,500
PENNSYLVANIA DEPT. OF ENVRN. RES. HARRISBURG	REGULATIONS & PRACTICES FOR HANDLING TOXIC STRIP MINE SPOILS TO PREVENT ACID MINE DRAINAGE	THOMPSON, D.	80559802	CONT	78/09/11	$30,276
PENNSYLVANIA ST. UNIV. UNIVERSITY PARK	BOUNDARY-LAYER MODEL IMPROVEMENT AND VALIDATION	BLACKADAR, A.	80604801	NEW	78/09/13	$102,000
PENNSYLVANIA STATE UNIV. UNIVERSITY PARK	MANUAL OF PRACTICE FOR PREMINING PLANNING EASTERN SURFACE COAL MINING	RAMANI, R. V.	80388202	INCR	78/07/13	$10,000
PENNSYLVANIA STATE UNIV. UNIVERSITY PARK	AIRCRAFT RADIATION MEASUREMENTS OVER ST. LOUIS	CARLSON, T.	80550001	INCR	78/07/31	$1,600

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		P E N N S Y L V A N I A				
** RESEARCH **						
PENNSYLVANIA STATE UNIV. UNIVERSITY PARK	SIMPLIFIED SAMPLING SYSTEMS	HEINSOHN, R.	80573801	NEW	78/04/17	$30,000
PHILADELPHIA WATER DEPT. PHILADELPHIA	REMOVAL OF TRACE ORGANIC COMPOUNDS BY BIOLOGICALLY ACTIVATED CARBON	RADZIUL, J.	80625601	NEW	78/08/02	$300,000
PHILADELPHIA, ACADEMY OF NATURAL PHILADELPHIA	GROWTHS OF CLADOPHORA GLOMERATA	PATRICK, R.	80510602	CONT	78/04/26	$130,964
PITTSBURGH, UNIV. OF PITTSBURGH	ION CHROMATOGRAPHY OF AROMATIC AMINES	FROHLIGER, J.	80529802	CONT	78/08/21	$20,000
PITTSBURGH, UNIV. OF PITTSBURGH	ALGAE IN OPEN DRINKING WATER RESERVOIRS & TOXICITY OF SCHIZOTHRIX CALCIOLA	SYKORA, J.	80536801	INCR	78/04/20	$7,944
PITTSBURGH, UNIV. OF PITTSBURGH	IMPROVED BIOLOGICAL WASTEWATER TREATMENT	NEUFELD, R.	80584701	NEW	78/08/21	$9,185
SUSQUEHANNA UNIV. SELINSGROVE	RECOVERY STUDIES OF PESTICIDES FROM SURFACE AND DRINKING WATERS	MCGRATH, T.	80604901	NEW	78/05/19	$28,900
THOMAS JEFFERSON UNIV. PHILADELPHIA	EFFECTS OF INSECTICIDES ON BENZO A PYRENE CARCINOGENESIS	TRIOLO, A.	80581901	NEW	78/08/21	$49,500
THOMAS JEFFERSON UNIV. PHILADELPHIA	MUTAGENIC POTENTIAL OF URBAN WATER AND AIR SAMPLES	WITMER, C.	80627901	NEW	78/09/01	$81,397
** DEMONSTRATION **						
GENERAL BATTERY CORP. READING	HYDROPERM MICROFILTRATION SYSTEM FOR TREATMENT OF WASTEWATER EFFLUENT	BARANSKI, J.	80574801	NEW	78/04/11	$96,105

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APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		P E N N S Y L V A N I A				
** DEMONSTRATION **						
PENNSYLVANIA DEPT. OF ENVRN. RES. HARRISBURG	A PROJECT TO DEMONSTRATE AND EVALUATE RECLAMATION STABILIZATION & EROSION CONTROL OF STRIP MINED LAN	LA COUR, W.	80451103	CONT	78/09/11	$100,000
** TRAINING **						
DREXEL UNIVERSITY PHILADELPHIA	SYMPOSIUM - ACTIVATED CARBON ABSORPTION OF ORGANICS FROM THE AQUEOUS PHASE	SUFFET, I.	90079501	NEW	78/05/19	66,958
PENNSYLVANIA ENVIRONMENTAL COUNCIL PHILADELPHIA	HAZARDOUS WASTE MGMT. LEGISLATIVE-ADMINISTRATIVE PUBLIC FORUM	WINSOR, ELEANOR	90069601	INCR	78/07/21	$2,200
PENNSYLVANIA STATE UNIV. UNIVERSITY PARK	CURRICULUM DEVELOPMENT OF A BACHELOR OF ENGINEERING TECHNOLOGY IN WATER QUALITY MANAGEMENT	COLE, C.	90070401	INCR	78/08/22	$25,000
PENNSYLVANIA ENVRN. COUNCIL, INC. PHILADELPHIA	PENNSYLVANIA ENVRN. CONFERENCE - "A QUALITY ENVNR. FOR PA. MEETING THE CHALLENGE"	WINSOR, C.	90079101	NEW	78/04/28	$5,000
PHILADELPHIA PUBLIC INTEREST LAW CTR. PHILADELPHIA	ENVIRONMENTAL CANCER PREVENTION CENTER DEMONSTRATION PROJECT.	SLAP, ALBERT	90088801	NEW	78/09/22	$75,361
PITTSBURGH, UNIV. OF PITTSBURGH	GRADUATE TRAINING IN AIR POLLUTION	CORN, M.	90067702	CONT	78/07/24	$15,000
** FELLOWSHIPS **						
DREXEL UNIV. PHILADELPHIA	ENGINEERING & SCIENCE	UPADHYAY, J.	91122001	NEW	78/08/14	$8,551
DREXEL UNIV. PHILADELPHIA	ENVIRONMENTAL SCIENCE	MCCLURE, G.	91130301	NEW	78/07/26	$2,853

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		P E N N S Y L V A N I A				
** FELLOWSHIPS **						
PENNSYLVANIA ST. UNIV. UNIVERSITY PARK	CIVIL ENGINEERING	VARNER, J.	91128801	NEW	78/07/17	$1,570
PENNSYLVANIA, UNIV OF PHILADELPHIA	CIVIL ENGINEERING	LEVY, R.	91110101	NEW	78/06/28	$7,000
PENNSYLVANIA, UNIV. OF PHILADELPHIA	FOREST MANAGEMENT	ANDRESEN, A.	91110801	NEW	78/06/15	$8,076
PENNSYLVANIA, UNIV. OF PHILADELPHIA	REGIONAL PLANNING	PRINDLE, D.	91122201	NEW	78/06/28	$13,620
PITTSBURGH, UNIV. OF PITTSBURGH		HUMPHREY, G.	91128601	NEW	78/07/10	$1,129
PITTSBURGH, UNIV. OF PITTSBURGH	MS/CIVIL ENGINEERING	SHAMITKO, G.	91128701	NEW	78/07/19	$674
PITTSBURGH, UNIV. OF PITTSBURGH	SANITARY ENGINEERING	VINCENT, L.	91130101	NEW	78/07/20	$1,031
PITTSBURGH, UNIV. OF PITTSBURGH	SANITARY ENGINEERING	SHAH, K.	91130201	NEW	78/08/11	$1,315
PITTSBURGH, UNIV. OF PITTSBURGH	CHEMISTRY	MILLER, M.	91131001	NEW	78/08/11	$1,709

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		RHODE ISLAND				
** RESEARCH **						
GORDON RES. CONF. KINGSTON	GORDON RES. CONF. IN ENVRN. SCI.: WATER, 1978	CRUICKSHANK, A.	80592801	NEW	78/04/13	$9,125
RHODE ISLAND, UNIV. OF KINGSTON	A FACILITY FOR THE EXPERIMENTAL ANALYSIS OF COASTAL MARINE	KNAUSS, J.	80390203	INCR	78/04/28	$2,682
			80390203	INCR	78/08/02	$3,000
			80390203	INCR	78/09/14	$190,600
RHODE ISLAND, UNIV. OF KINGSTON	ECOLOGICAL DAMAGE ASSESSMENT OF PETROLEUM DISCHARGES INTO MARINE ENV.	QUINN, J.	80547702	CONT	78/09/11	$70,000
RHODE ISLAND, UNIV. OF KINGSTON	MARINE ECOSYSTEMS RESEARCH LAB.	PILSON, M.	80607201	NEW	78/09/15	$757,600
** TRAINING **						
RHODE ISLAND ASSOC. OF CONS. COMM. SMITHFIELD	STATEWIDE PUBLIC PARTICIPATION IN WATER QUALITY MANAGEMENT IN RHODE ISLAND	POIRIER, R.	90083801	NEW	78/06/27	$7,000
** FELLOWSHIPS **						
RHODE ISLAND, UNIV. OF KINGSTON	M.S.	DOLCE, T. J.	91092301	INCR	78/06/27	$103

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		SOUTH CAROLINA				
** RESEARCH **						
CLEMSON UNIV. CLEMSON	DEVELOPMENT OF ALTERNATIVE CONTROL METHODS TO MIREX AND CHLORDANE FOR THE IMPORTED FIRE ANT	HAYS, S. B.	80471703	CONT	78/08/01	$39,000
CLEMSON UNIV. CLEMSON	PIEDMONT AQUATIC ECOSYSTEM RESPONSE TO N.P.S. POLLUTANT REDUCTION	DYSART, B.	80631601	NEW	78/08/14	$60,000
SOUTH CAROLINA, UNIV. OF COLUMBIA	DEVELOPMENT OF COLLECTION METHODS FOR AIRBORNE PESTICIDES & POLYCHOLINATED BIPHENYLS USING SOLID ADS	BIDLEMAN, T.	80471601	INCR	78/08/31	$45,000
SOUTH CAROLINA, UNIV. OF COLUMBIA	COREHOLE SPACING MODELS DEFINING TOXIC ROCK BODIES IN COAL SURFACE MINING	HORNE, J.	80510102	CONT	78/07/21	$101,237
SOUTH CAROLINA, UNIV. OF COLUMBIA	PREDICTING ACID POLLUTION POTENTIAL FROM COAL STRIP MINES	CARUCCIO, F.	80511602	CONT	78/06/19	$66,625
** DEMONSTRATION **						
LA FRANCE INDUSTRIES LA FRANCE	CLOSED CYCLE TEXTILE DYEING-FULL SCALE DEMONSTRATION	HILL, DON	80518201	INCR	78/09/01	$390,100
SOUTH CAROLINA LAND RESOURCE COLUMBIA	BROADWAY LAKE SEDIMENT REDUCTION PROGRAM	PARRIS, J.	80572701	NEW	78/08/14	$153,365
** TRAINING **						
CLEMSON UNIV. CLEMSON	STAFF GUIDE DEVELOPMENT PROJECT GRANT	ALLEN, J.	90071401	INCR	78/06/07	$13,000
CLEMSON UNIV. CLEMSON	GRADUATE TRAINING IN WATER POLLUTION CONTROL AND WATER SUPPLY	RICH, L.	90082401	NEW	78/06/28	$30,424

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		S O U T H C A R O L I N A				
** TRAINING **						
CLEMSON UNIV. CLEMSON	GRADUATE TRAINING IN AIR POLLUTION	OVERCAMP, T.	90085001	NEW	78/07/20	$15,000
SOUTHERN EDUC. COMMUNICATIONS ASSOC. COLUMBIA	CHEMICALS IN THE ENVRN.	HALL, M.	90076701	INCR	78/09/20	$164,737
** FELLOWSHIPS **						
CLEMSON UNIV. CLEMSON	ENGINEERING	TAYLOR, D.	91122601	NEW	78/06/09	$7,995
CLEMSON UNIV. CLEMSON	ENVIRONMENTAL SYSTEMS ENGINEERING	JOHNSON, N.	91124801	NEW	78/06/19	$6,000
SOUTH CAROLINA, UNIV OF COLUMBIA	ENVIRONMENTAL SANITATION	MOSELEY, J.	91135001	NEW	78/09/11	$1,474
SOUTH CAROLINA, UNIV. OF COLUMBIA	CERAMIC ENGINEERING	PROHASKA, J.	91122701	NEW	78/07/13	$1,270
SOUTH CAROLINA, UNIV. OF COLUMBIA	MASTER OF ENGINEERING	PRESTON, J.	91123601	NEW	78/07/10	$1,348
			91123601	INCR	78/07/31	$4,652
SOUTH CAROLINA, UNIV. OF SPARTANBURG	ENV. BUS., & PUBLIC RELATIONS	CANNON, P.	91123801	NEW	78/07/03	$797
SOUTH CAROLINA, UNIV. OF COLUMBIA	MASTERS OF PUBLIC ADMINISTRATION	ULLERY, J.	91123901	NEW	78/07/07	$528

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		S O U T H C A R O L I N A				
** FELLOWSHIPS **						
SOUTH CAROLINA, UNIV. OF COLUMBIA	PUBLIC ADMINISTRATION	GALARDI, M.	91124401	NEW	78/07/10	$1,666
SOUTH CAROLINA, UNIV. OF COLUMBIA	ENVIRONMENTAL HEALTH SCIENCES	WILLIAMS, J.	91124501	NEW	78/08/11	$6,000
SOUTH CAROLINA, UNIV. OF COLUMBIA	SCIENCE IN GEOLOGY	PADGETT, G.	91124601	NEW	78/07/14	$1,066
SOUTH CAROLINA, UNIV. OF COLUMBIA	MASTERS IN ENGINEERING	KENDALL, J.	91129601	NEW	78/07/20	$1,066
SOUTH CAROLINA, UNIV. OF COLUMBIA	MANAGEMENT SCIENCE	RETTERTON, V.	91134001	NEW	78/09/13	$2,140
SOUTH CAROLINA, UNIV. OF COLUMBIA	ZOOLOGY	SHEDROW, C.	91134101	NEW	78/09/15	$1,678
SOUTH CAROLINA, UNIV. OF COLUMBIA	MICROBIOLOGY	MARCUS, J.	91134301	NEW	78/09/06	$856
SOUTH CAROLINA, UNIV. OF COLUMBIA	BUSINESS ADM.	BEDENBAUGH, L.	91134401	NEW	78/09/13	$1,474
SOUTH CAROLINA, UNIV. OF COLUMBIA		TINSLEY, C.	91134501	NEW	78/09/15	$1,542
SOUTH CAROLINA, UNIV. OF WEST COLUMBIA		NORTON, B	91134601	NEW	78/09/11	$1,474

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		S O U T H C A R O L I N A				
** FELLOWSHIPS **						
SOUTH CAROLINA, UNIV. OF COLUMBIA		CHANDLER, K.	91134701	NEW	78/09/06	$1,810
SOUTH CAROLINA, UNIV. OF COLUMBIA		DAVIS, M.	91134801	NEW	78/09/13	$1,600
SOUTH CAROLINA, UNIV. OF COLUMBIA		HELMS, N.	91134901	NEW	78/09/15	$924
SOUTH CAROLINA, UNIV. OF COLUMBIA		MACHOWICZ, ROBERT	91134201	NEW	78/09/13	$1,056

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		S O U T H D A K O T A				
** TRAINING ** SOUTH DAKOTA RES. COAL BROOKINGS	STATEWIDE PARTICIPATION IN WATER QUALITY MANAGEMENT IN SOUTH DAKOTA	EDIE, E.	900H4001	NEW	78/06/27	$7,000

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		T E N N E S S E E				
** RESEARCH **						
TENNESSEE TECH. UNIV. COOKEVILLE	SEPARATION OF ASBESTOS IN ENVIRONMENTAL SAMPLES BY ZONAL CETRIFUGATION	BONNER, W.	80625501	NEW	78/08/22	$59,984
TENNESSEE, UNIV. OF KNOXVILLE	CHEMICAL RECLAMATION OF SCRAP RUBBER	LARSEN, JOHN W.	80432101	INCR	78/09/11	$25,000
TENNESSEE, UNIV. OF KNOXVILLE	DATABASE LOCATION & EVALUATION FOR HEAVY METALS DISCHARGED INTO MUN WW COLLECTIONS TREATMENT SYSTEMS	MINEAR, ROGER A.	80560601	INCR	78/07/10	$93,975
** FELLOWSHIPS **						
VANDERBILT UNIV. NASHVILLE	CIVIL ENGINEERING	CURREY, J.	91127401	NEW	78/07/18	$5,200

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		T E X A S				
** RESEARCH **						
AUSTIN, CITY OF AUSTIN	INVESTIGATION OF HYDROLOGIC AND OPERATIONAL CHARACTERISTICS OF PAVING SYSTEMS	GRAVES, C.	80633801	NEW	78/09/07	$25,559.
BAYLOR COLLEGE OF MEDICINE HOUSTON	MOVEMENT AND FATE OF VIRUSES AND ORGANIC POLLUTANTS IN GROUND WATER DURING THE LAND TREATMENT OF WAS	GERBA, C.	80529202	CONT	78/07/07	$161,815
HOUSTON, UNIV. OF HOUSTON	DEVELOPMENT OF NEW SAMPLING TECH. FOR ANALYSIS OF POLAR & SEMIPOLAR AIR POLL. AT THE PPT LEVEL	ZLATKIS, A.	80602201	NEW	78/06/29	$50,000
HOUSTON, UNIV. OF HOUSTON	MOBILE PILOT-EVALUATION OF REVERSE OSMOSIS, ACTIVATED ALUMINA ABSORPTION AND ION EXCHANGE FOR TREATM	CLIFFORD, D.	80607301	NEW	78/06/19	$179,174
NORTH TEXAS STATE UNIV. DENTON	OXIDATION OF WATER SUPPLY REFRACTORY SPECIES BY OZONE WITH ULTRAVIOLET RADIATION	GLAZE, W.	80464003	CONT	78/06/29	$90,550
NORTH TEXAS STATE UNIV. DENTON	IDENT. OF NON VOLATILE CHLORINATED ORGANIC COMPOUNDS FORMED DURING WATER CHLORINATION	GLAZE, W	80582201	NEW	78/06/28	$59,608
NORTH TEXAS STATE UNIV. DENTON	PILOT SCALE EVALUATION OF BIOLOGICAL ACTIVATED CARBON FOR REMOVAL OF THM PRECURSORS	GLAZE, W.	80615701	NEW	78/07/21	$217,000
SOUTHWEST RES. INST. SAN ANTONIO	DEVELOPMENT OF OIL IN WATER MONITOR	SILVUS, H.	80581701	NEW	78/04/20	$59,990
SOUTHWEST RES. INST. SAN ANTONIO	ENVIRONMENTAL MONITORING OF SITES CONDUCTING LAND APPLICATION OF LIQUID SLUDGE	JOHNSON, D.	80590901	NEW	78/04/13	$70,500
TEXAS A& M RES. FDN. COLLEGE STA.	DEVELOPMENT OF A LIDAR POLARIMETER TECHNIQUE OF MEASURING SUSPENDED SOLIDS IN WATER	NEWTON, R.	80635101	NEW	78/08/29	$24,920

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		T E X A S				
** RESEARCH **						
TEXAS A&M RES. FDN. COLLEGE STATION	COLLECTION AND ASSESSMENT OF SUB MICRON PARTICULATE MATTER	MCFARLAND, A. R.	80419002	INCR	78/08/04	$30,000
TEXAS A&M RES. FDN. COLLEGE STATION	EFFECTS OF DRILLING FLUIDS AND OIL IN CORALS OCCUPYING HARD BANK COMMUNITIES	BRIGHT, T.	80544101	INCR	78/08/23	$39,801
TEXAS A&M RES. FDN. COLLEGE STATION	SOIL DISPOSAL OF API PIT WASTES	BROWN, K.	80547401	INCR	78/05/24	$50,000
TEXAS A&M RES. FDN. COLLEGE STATION	EVALUATION OF TOXAPHENE & ALTERNATIVES FOR THE CNTRL. OF COTTON BOLLWORM & TOBACCO BUDWORM ON COTTON	PLAPP, F.	80549301	NEW	78/04/11	$70,260
TEXAS A&M RES. FDN. COLLEGE STA.	DEVELOPMENT OF DESIGN CRITERIA FOR DISPOSAL OF WASTE PESTICIDE SOLUTION USING ROOFED AND UNROOFED EV	REDDELL, D.	80610301	NEW	78/08/31	$51,960
TEXAS A&M RES. FDN. COLLEGE STATION	SYSTEMS OF INTEGRATED PEST MANAGEMENT FOR MAJOR CROPS	ADKISSON, P.	80627701	NEW	78/08/16	$400,000
TEXAS SOUTHERN UNIV HOUSTON	DEVELOPMENT OF A FIELD ELECTRODE METHOD FOR THE DETERMINATION OF TOTAL SULFIDED IN WATER AND WASTEWA	WILSON, B.	80623001	NEW	78/09/18	$48,034
TEXAS, STATE OF AUSTIN	TEXAS LIGNITE DEVELOPMENT ENVIRONMENTAL ASSESSMENT AND RESEARCH PLAN	WHITE, D.	80615901	NEW	78/08/14	$80,000
			80615901	INCR	78/09/22	$80,000
TEXAS, UNIV. OF AUSTIN	AEROSOL DYNAMICS	BROCK, J.	80366003	INCR	78/07/24	$34,000

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
	T E X A S					
** RESEARCH **						
TEXAS, UNIV. OF AUSTIN	REACTIONS OF SULFUR DIOXIDE IN AEROSOLS	HIMMELBLAU, D.	80381403	INCR	78/08/29	$2,000
TEXAS, UNIV. OF SAN ANTONIO	HUMAN ENTERIC VIRUS SURVIVAL IN SOIL FOLLOWING IRRIGATION WITH SEWAGE PLANT EFFLUENTS	SAGIK, B.	80384403	INCR	78/04/20	$4,663
TEXAS, UNIV. OF SAN ANTONIO	DEVELOPMENT OF FIELD VIRUS CONCENTRATION TECHOLOGY	SORBER, C.	80447402	CONT	78/05/26	$28,000
TEXAS, UNIV. OF GALVESTON	COMBINE TESTING PROTOCOL FOR DETECTING ENVRN. MUTAGENIC AGENTS	LEGATOR, M.	80462102	INCR	78/05/24	$16,168
TEXAS, UNIV. OF AUSTIN	PREDICTING RESPONSE OF NATURAL SYSTEM TO URANIUM EXTRACTION	GALLOWAY, W.	80535702	CONT	78/08/21	$131,980
TEXAS, UNIV. OF SAN ANTONIO	ALTERNATE WATER DISINFECTION SCHEMES FOR REDUCED TRIHALOMETHANE FORMATION	SORBER, C.	80604601	NEW	78/08/04	$62,964
TEXAS, UNIV. OF AUSTIN	ENVIRONMENTAL EFFECTS OF IN SITU GASIFICATION OF TEXAS LIGNITE	EDGAR, T.	80626101	NEW	78/09/01	$52,590
** DEMONSTRATION **						
LCC INST. OF WATER RES. LUBBOCK	LUBBOCK LAND TREATMENT SYSTEM RESEARCH & DEMONSTRATION PROGRAM	COOK, E.	80620401	NEW	78/09/06	$9,500,000
** TRAINING **						
NORTH TEXAS ST. UNIV. DENTON	EPA TRAINEESHIPS WATER POLLUTION CONTROL AND WATER SUPPLY	SILVEY, J.	90089301	NEW	78/09/19	$24,200
TEXAS, UNIV. OF AUSTIN	PROFESSIONAL TRAINING OF GRADUATE STUDENTS IN WATER POLLUTION CONTROL AND WATER SUPPLY.	ARMSTRONG, N. E.	90089701	NEW	78/09/27	$28,450

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		T E X A S				
** TRAINING **						
TEXAS ENVRN. COALITION AUSTIN	STATEWIDE PUBLIC PARTICIPATION INWATER QUALITY MANAGEMENT IN TEXAS	HIGGINS, B.	90086601	NEW	78/07/03	$7,000
TEXAS, UNIV. OF AUSTIN	GRADUATE TRAINING IN AIR POLLUTION	COOPER, H.	90068002	CONT	78/08/29	$59,732
** FELLOWSHIPS **						
HOUSTON, UNIV. OF HOUSTON	B.S. BIOLOGY	INNERARITY, M.	91117101	NEW	78/06/28	$1,065
HOUSTON, UNIV. OF HOUSTON	WILDLIFE SCIENCE	SPAIN R.	91131301	NEW	78/08/08	$2,666
TEXAS, UNIV. OF EL PASO	CHEMISTRY & CIVIL ENGR	HUBERT, J.	91117001	NEW	78/06/12	$5,480
TEXAS, UNIV. OF AUSTIN	ENGINEERING	AGUIRRE, M.	91118401	NEW	78/07/13	$2,765
TEXAS, UNIV. OF AUSTIN	ELECTRICAL ENGR	KOPP, H.	91127001	NEW	78/07/19	$6,000
TEXAS, UNIV. OF EL PASO	CIVIL ENGINEERING	MARTINEZ, M.	91129301	NEW	78/08/09	$3,050

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		U T A H				
** RESEARCH **						
UTAH STATE UNIV. LOGAN	MONITORING INSECT POPULATIONS IN UTAH ALFALFA FIELDS TO MODIFY CNTL. PRACTICES	DAVIS, D.	80531902	CONT	78/08/17	$26,800
UTAH STATE UNIV. LOGAN	SYMPOSIUM ON PERFORMANCE & UPGRADING WASTEWATER	MIDDLEBROOKS, J.	80584201	NEW	78/04/10	$19,493
UTAH, UNIV. OF SALT LAKE CITY	POLLUTANT FORMATION DURING FIXED-BED AND SUSPENSION COAL COMBUSTION	PERSHING, D.	80589901	NEW	78/04/28	$104,757
** TRAINING **						
UTAH ENVIRONMENT CENTER SALT LAKE CITY	STATEWIDE PARTICIPATION IN WATER QUALITY MANAGEMENT IN UTAH	URE, JIM	90089901	NEW	78/09/27	$7,000
UTAH ST. UNIV. LOGAN	GRADUATE TRAINING PROGRAM IN RURAL AND AGRICULTURAL WATER QUALITY MANAGEMENT	JONES, N.	90086101	NEW	78/07/31	$15,800
** FELLOWSHIPS **						
UTAH STATE UNIV. LOGAN	M.S./ENGR.	THOMAS, M.	91063101	INCR	78/07/31	$1,621
UTAH STATE UNIV. SALT LAKE CITY	M.S./ENGR. SCIENCE	GEORGESON, M. B.	91086501	INCR	78/07/13	$1,766
UTAH, UNIV. OF SALT LAKE CITY	SANITARY ENGINEERING	PATEL, C.	91125001	NEW	78/06/28	$979
UTAH, UNIV. OF SALT LAKE CITY	BIOLOGY	GUNNELL, R.	91128001	NEW	78/07/03	$791

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NU	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		U T A H				
** FELLOWSHIPS **						
UTAH, UNIV. OF SALT LAKE CITY		PINE, T.	91128501	NEW	78/07/31	$1,645
UTAH, UNIV. OF SALT LAKE	BIOLOGY	DENTON, R.	91130901	NEW	78/08/09	$790
UTAH, UNIV. OF SALT LAKE CITY	CHEMISTRY	SCANLAN, L.	91131801	NEW	78/09/27	$1,500
UTAH, UNIV. OF SALT LAKE CITY	CIVIL ENGINEERING	BOUSFIELD, K.	91132301	NEW	78/08/18	$1,500
UTAH, UNIV. OF SALT LAKE CITY	CIVIL ENGRNG.	BLAKE, D.	91135101	NEW	78/08/23	$1,500

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
	V I R G I N I A					
** RESEARCH **						
GEORGE MASON UNIV. FAIRFAX	GIARDIA CYSTS WITH PHASE & SCANNING-ELECTRON MICROSCOPY	ERICKSEN, T.	80577301	NEW	78/04/07	$10,875
HAMPTON INST. HAMPTON	WATER QUALITY LABORATORY FOR CHESAPEAKE BAY AND ITS TRIBUTARIES AT HAMPTON INSTITUTE	BOWIE, W.	80622901	NEW	78/08/16	$315,521
MITRE CORP. MCLEAN	IDENTIFICATION OF TOXIC POLLUTANT DISCHARGES FOR UNIT PROCESSES	BECKER, D.	80562001	INCR	78/04/10	$50,000
MITRE CORP. MCLEAN	NEUTRALIZATION/PRECIPITATION MANUAL OF PRACTICE	CLIFFORD, P.	80562301	INCR	78/05/31	$19,774
NORFOLK ST. COLLEGE NORFOLK	PHOTON CORRELATION IN LASER DOPPLER SPECTROSCOPY FOR THE IN-SITU DETERMINATION OF PARTICULATE SIZE I	ALEYAMMA, G.	80376503	CONT	78/09/11	$37,530
OLD DOMINION UNIV. RES. FDN. NORFOLK	SULFUR DIOXIDE POLLUTION: REVIEW & ASSESSMENT OF FUTURE MEASUREMENT NEEDS FROM AIRBORNE LIDAR	OUSTERHOUT, D. S.	80501701	INCR	78/06/19	$9,200
VIRGINIA COMMNWEALTH UNIV. RICHMOND	STUDY OF PATHOGENIC FREE LIVING AMEBAS IN FRESH WATER LAKES IN VIRGINIA	DUMA, R.	80501403	CONT	78/09/22	$72,055
VIRGINIA INST. OF MARINE SCI. GLOUCESTER PT.	MAPPING THE DISTRIBUTION AND ABUNDANCE OF SUBMERGED AQUATIC VEGETATION IN LOWER CHESAPEAKE BAY	ORTH, R.	80595101	NEW	78/05/19	$68,681
VIRGINIA INST. OF MARINE SCI. GLOUCESTER PT.	BIOLOGY & PROPAGATION OF EELGRASS, ZOSTERA MARINA	ORTH, R.	80595301	NEW	78/06/27	$319,060
VIRGINIA INST. OF MARINE SCI. GLOUCESTER PT.	FUNCTIONAL ECOLOGY OF SUBMERGED AQUATIC VEGETATION IN THE LOWER CHESAPEAKE BAY	WETZEL, R.	80597401	NEW	78/05/26	$629,877

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		V I R G I N I A				
** RESEARCH **						
VIRGINIA INST. OF MARINE SCI. GLOUCESTER PT.	BIOGENIC STRUCTURE OF CHESAPEAK BAY SEDIMENTS	BOESCH, D.	80596201	NEW	78/06/27	$76,857
VIRGINIA INST. OF MARINE SCI. GLOUCESTER PT.	BASELINE SEDIMENT STUDIES TO DETERMINE DISTRIBUTION PHYSICAL PROPERTIES, SEDIMENTATION BUDGETS AND R	NICHOLS, M.	80600101	NEW	78/06/28	$600,517
VIRGINIA INST. OF MARINE SCI. GLOUCESTER PT.	FATE, TRANSPORT AND TRANSFORMATION OF TOXICS; SIGNIFICANCE OF SUSPENDED SEDIMENT AND FLUID MUD	NICHOLS, M.	80600201	NEW	78/07/19	$197,879
VIRGINIA INST. OF MARINE SCI. GLOUCESTER PT.	INVESTIGATION OF ORGANIC POLLUTANTS IN THE CHESAPEAKE BAY	HUGGETT, R.	80601201	NEW	78/06/28	$772,412
VIRGINIA INST. OF MARINE SCIENCE GLOUCESTER POINT	DELINEATION OF COASTAL MARSH BOUNDARIES IN THE CENTRAL ATLANTIC COASTAL REGION	BOON, JOHN D.	80494701	INCR	78/04/13	$2,000
VIRGINIA MEDICAL COLLEGE RICHMOND	EFFECTS OF SELECTED ORGANIC WATER CONTAMINANTS ON MALE REPRODUCTION FUNCTION	BORZELLECA, JOSEPH F.	80429002	INCR	78/07/27	$121,984
VIRGINIA POLYTECHNIC INST. BLACKSBURG	BIOLOGICAL CONTROL OF MUSK & PLUMELESS THISTLE IN PASTURES	KOK, L.T.	80593101	NEW	78/08/14	$29,013
VIRGINIA POLYTECHNIC INST.&STATE UNIV. BLACKSBURG	PARAMETRIC ASSESSMENT & OPTIMIZATION OF VOLATILE ORGANIC ANALYSIS METHODS	HOEHN, R. C.	80486401	INCR	78/09/28	$5,093
VIRGINIA ST. WATER CONTROL BD. RICHMOND	EVALUATION OF MANAGEMENT TOOLS IN THREE CHESAPEAKE BAY WATERSHEDS IN VIRGINIA	DAVIS, R.	80631001	NEW	78/09/01	$999,240
VIRGINIA STATE WATER CNTRL. BD. RICHMOND	TECHNICAL SUPPORT & COORD. FOR THE EPA'S CHES. BAY PROGRS.	DAVIS, R.	80585901	NEW	78/05/08	$309,750

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		V I R G I N I A				
** RESEARCH **						
			80585901	INCR	78/09/06	$13,465
VIRGINIA, UNIV. OF CHARLOTTESVILLE	SULFUR DIOXIDE OXIDATION IN SCRUBBER SYSTEMS	HUDSON, J.	80522702	CONT	78/06/12	$88,927
VIRGINIA, UNIV. OF CHARLOTTESVILLE	ANALYSIS OF AROMATIC HYDROCARBONS, PHENOLS & AMINES IN WATER	HUNT, D.	80579001	NEW	78/08/24	$50,000
VIRGINIA, UNIV. OF CHARLOTTESVILLE	INVESTIGATION OF THE IMPACT OF TOPOGRAPHIC AND LAND SEA CIRCULATIONS ON THE TRANSPORT AND DIFFUSION	PIELKE, R.	80620701	NEW	78/08/31	$39,617
WILLIAM & MARY COLLEGE WILLIAMSBURG	SEDIMENT & PORE WATER CHEMISTRY (CHESAPEAKE BAY PROGRAM)	TYREE, S.	80596601	NEW	78/06/27	$70,000
** TRAINING **						
CITIZENS PROGRAM FOR CHESAPEAKE BAY BLACKBURG	PUBLIC PARTICIPATION & TRAINING PROCESS FOR WATER QUALITY PLANNING & MGMT.	HAGERMAN, G.	90074801	INCR	78/06/23	$35,815
IZAAK WALTON LEAGUE OF AM. ARLINGTON	PRODUCTION OF CITIZEN'S GUIDE TO THE FEDERAL WATER POLLUTION CONTROL ACT	SHARPE, M.	90090901	NEW	78/09/20	$28,825
IZAAK WALTON LEAGUE OF AMERICA ARLINGTON	MUNICIPAL SLUDGE & RESOURCE CONSERVATION & RECOVERY ACT	LORENZ, J.	90075401	INCR	78/09/20	$24,966
NATIONAL RECREATION & PARK ASSN. ARLINGTON	MAXIMIZING RECREATION AND OPEN SPACE BENEFITS FROM 201 AND 208 PROGRAMS	TINDALL, B.	90087401	NEW	78/07/31	$10,000
VIRGINIA POLYTECHNIC INST. & ST. UNIV. BLACKSBURG	WATER RESOURCES MANAGEMENT & QUALITY CONTROL	KING, P.	90085301	NEW	78/07/24	$18,850

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APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		V I R G I N I A				
** FELLOWSHIPS **						
GEORGE MASON UNIV. FAIRFAX	ENVIRONMENTAL BIOLOGY	CLOYED, C.	91118601	NEW	78/06/15	$1,343
OLD DOMINION UNIV. NORFOLK	ENVIRONMNETAL SCI & ENGR	WOODFIN, R. JR.	91127901	NEW	78/07/03	$3,266
VIRGINIA COMM. UNIV. RICHMOND	CHEMICAL ENGR	CHAUDHARI, K.	91116901	NEW	78/06/28	$3,726
VIRGINIA POLYTECHNIC INST. BLACKSBURG		MOORE, J.	91124901	NEW	78/09/14	$2,000
VIRGINIA POLYTECHNIC INST. BLACKSBURG	CIVIL ENGR	DISALVO, R.	91128201	NEW	78/07/13	$2,000
VIRGINIA POLYTECHNIC INST. BLACKSBURG	CIVIL ENGINEERING	KELLEY, R.	91135301	NEW	78/09/13	$6,000
VIRGINIA, UNIV. OF CHARLOTTESVILLE		MCNIDER, R.	91122101	NEW	78/06/27	$6,824

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APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		W A S H I N G T O N				
** RESEARCH **		CYRE, M.	80592901	NEW	78/09/11	$120,000
BELLEVUE, CITY OF BELLEVUE	ANALYSIS OF APPLIED BEST MGT. PRACTICES FOR STORMWATER QUALITY CNTRL.		80584601	NEW	78/04/07	$88,280
FRED HUTCHINSON CANCER RES. SEATTLE	CANCER INCIDENCE IN RELATION TO ASBESTOS IN DRINKING WATER	POLISSAR, L.	80560201	INCR	78/04/11	$26,538
SEATTLE, MUN. OF METRO. SEATTLE	FATE & EFFECTS OF SEDIMENTS FROM COMBINE SEWER & STORM DRAIN OVERFLOWS IN SEATTLE NEAR SHORE WATER	VARNI, M.	80632301	NEW	78/09/18	$150,000
SEATTLE, MUN. OF METRO. SEATTLE	APPLICATION OF DEWATERED SLUDGE TO FOREST SITES, HEAVY METALS IN WILDLIFE FOOD CHAINS	VARNI, M.	80403303	INCR	78/04/10	$43,000
WASHINGTON STATE UNIV. PULLMAN	MEASUREMENT OF TROPOSPHERIC HALOCARBONS BY GAS CHROMATOGRAPHY/MASS SPECTROMETRY	CRONN, D.	80534202	CONT	78/07/31	$44,441
WASHINGTON STATE UNIV. PULLMAN	EXPERIMENTAL DETERMINATION OF DRY DEPOSITION RATES	ROBINSON, E.	80534302	CONT	78/05/24	$155,000
WASHINGTON STATE UNIV. PULLMAN	RURAL OXIDANT STUDIES & THE ROLE OF NOX IN RURAL OXIDANT FORMATION	WESTBERG, H.	80537602	CONT	78/08/07	$60,000
WASHINGTON STATE UNIV. PULLMAN	AMBIENT HYDROCARBON AND OZONE MEASUREMENTS NEAR A REFINERY	WESTBERG, H.	80589601	NEW	78/07/07	$48,392
WASHINGTON STATE UNIV. PULLMAN	AN ASSESSMENT OF PUBLIC AND PRIVATE BENEFITS OF ABATING POLLUTION STEMMING FROM IRRIGATION RETURN FL	WHITTLESEY, N.	80612401	NEW	78/06/23	$19,869
WASHINGTON STATE UNIV. PULLMAN	ASSESSMENT OF TURBIDITY NETWORK DATA	ROBINSON, E.				

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		WASHINGTON				
** RESEARCH **						
WASHINGTON, STATE OF TUMWATER	STUDY OF THE DISTRIBUTION AND HEALTH EFFECTS OF GIARDIA LAMBLIA IN WATER SUPPLY	FROST, F.	80580901	NEW	78/06/20	$77,732
WASHINGTON, STATE UNIV. PULLMAN	SYNPOTIC METEOROLOGY AND AIR QUALITY PATTERNS IN THE ST. LOUIS RAPS PROGAM - 1	ROBINSON, E	80617601	NEW	78/09/01	$40,000
WASHINGTON, UNIV. OF SEATTLE	OPTICAL EFFECTS OF ATMOSPHERIC AEROSOL	WAGGONER, ALAN P.	80066513	INCR	78/06/27	$117,000
WASHINGTON, UNIV. OF SEATTLE	FIELD STUDIES OF THE OXIDATION OF SO2 IN CLOUDS FIELD STUDIES OF THE OXIDATION OF SO2 IN CLOUDS	HOBBS, P.	80526301	NEW	78/08/23	$40,747
WASHINGTON, UNIV. OF SEATTLE	IDENTIFICATION AND PREVALENCE OF YERSINIA ENTEROCOLITICA IN WASHINGTON STATE WATER SUPPLIES	METZLER, T.	80531302	CONT	78/06/26	$57,526
WASHINGTON, UNIV. OF SEATTLE	EXAMINATION OF MORBIDITY DATA FROM SKIN TUMORS IN THE U. S.	LEE, J.	80536301	INCR	78/09/01	$10,061
WASHINGTON, UNIV. OF SEATTLE	ENDOCRINOLOGIC AND REPRODUCTIVE STATES OF BIRD POPULATIONS UNDER ENVIRONMENTAL STRESS	FARMER, D.	80540902	CONT	78/08/16	$27,466
WASHINGTON, UNIV. OF SEATTLE	DEVELOPMENT & VALIDATION OF THE ECHINODERM FERTILIZATION BIOASSAY FOR TESTING TOXIC SUBSTANCES	STOBER, Q.	80583901	NEW	78/06/27	$99,957
			80583901	INCR	78/09/16	$5,000
WASHINGTON, UNIV. OF SEATTLE	AIR POLLUTION RESEARCH - PARTICULATE AND SO2 CONTROL WITH UN ELECTROSTATIC SCRUBBER	PILAT, M.	80603501	NEW	78/06/09	$107,160

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		WASHINGTON				
** RESEARCH **						
WASHINGTON, UNIV. OF SEATTLE	PRESENCE OF PRIORITY POLLUTANTS IN SEWAGE AND THEIR REMOVAL IN SEWAGE TREATMENT PLANTS	DEWALLE, F.	80610201	NEW	78/06/23	$400,000
			80610201	INCR	78/09/11	$333,478
WASHINGTON, UNIV. OF SEATTLE	REMOVAL OF GIARDIA LAMBLIA CYSTS IN DRINKING WATER PLANTS	DEWALLE, F.	80612701	NEW	78/06/02	$50,000
WASHINGTON, UNIV. OF SEATTLE	EFFECTS OF PLANFORM GEOMETRY ON TIDAL FLUSHING AND MIXING IN MARINAS	NECE, R.	80614601	NEW	78/06/29	$12,637
** DEMONSTRATION **						
KITSAP CNTY. PORT ORCHARD	LONG LAKE REHABILITATION PROGRAM	MAHAN, WILLIAM H.	80422201	INCR	78/06/07	$169,030
PACIFIC WOOD TREATING CORP. RIDGEFIELD	WOOD TREATING WASTE RECYCLE SYSTEM	SHUM, A.	80517901	INCR	78/04/11	$13,000
SKOKOMISH INDIAN TRIBE SHELTON	SKOKOMISH SALMON PROCESSING PLANT WASTEWATER TREATMENT SYSTEMS	SMITH, WILLIAM L.	80391101	INCR	78/06/27	$1,520
VANCOUVER, PORT OF VANCOUVER	VANCOUVER LAKE REHABILITATION	NETH, O.	80472901	INCR	78/08/11	$3,443,328
** TRAINING **						
GREEN RIVER COMMUN. COLLEGE AUBURN	STAFF GUIDE DEVELOPMENT PROJECT GRANT	DELVECCHIO, F.	90071301	INCR	78/09/14	$90,000

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		W A S H I N G T O N				
** TRAINING **						
SIERRA CLUB SEATTLE	STATEWIDE PUBLIC PARTICIPATION IN WATER QUALITY MANAGEMENT IN WASHINGTON	ENSROTH, K.	90086501	NEW	78/08/11	$7,000
WASHINGTON, UNIV. OF SEATTLE	AIR POLLUTION TRAINING PROG	AUGUST T. ROSSANO	90079701	NEW	78/07/14	$52,655
WASHINGTON, UNIV. OF SEATTLE	TRAINING IN WATER SUPPLY AND WATER POLLUTION CONTROL	FERGUSON, J.	90086201	NEW	78/07/31	$26,300
** FELLOWSHIPS **						
MOUNT VERNON CITY COLLEGE MOUNT VERNON		NYMAN, T.	91120201	NEW	78/06/12	$7,965
SEATTLE UNIVERSITY SEATTLE	MS/PUBLIC ADMINISTRATION	HUGGINS, H.	91130001	NEW	78/07/26	$5,159
WASHINGTON ST. UNIV. PULLMAN	ENVIRONMENTAL SCIENCE	MOORE, B.	91121101	NEW	78/06/19	$9,672
WASHINGTON, UNIV. OF SEATTLE	ENVIRONMENTAL SCIENCE	WILL, S.	91118301	NEW	78/06/15	$9,733
WASHINGTON, UNIV. OF SEATTLE	PH.D./ENGINEERING	HARRISON, L.	91123201	NEW	78/06/26	$5,691
WASHINGTON, UNIV. OF SEATTLE		KIMMEL, M.	91132401	NEW	78/09/11	$6,000
WASHINGTON, UNIV. OF SEATTLE		TRIAL, M.	91135401	NEW	78/09/18	$6,000

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		WASHINGTON				
** FELLOWSHIPS **						
WESTERN WASHINGTON UNIV. BELLINGHAM		BYRON, G.	91129901	NEW	78/08/01	$6,000

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		W E S T V I R G I N I A				
** RESEARCH **						
NATIONAL STEEL CORP WEIRTON	SINGLE STAGE BIOLOGICAL NITRIFICATION STUDY	SUITLAS, J.	80623401	NEW	78/08/24	$75,000
WEST VIRGINIA UNIV. MORGANTOWN	FUGITIVE EMISSION DETECTION BY PARTICLE MORPHOLOGY STUDY	MELOY, T.	80623101	NEW	78/08/29	$33,000
** DEMONSTRATION **						
SOUTH CHARLESTON CITY SAN. BD. SOUTH CHARLESTON	CO-DISPOSAL OF SEWAGE SLUDGE & MUNICIPAL REFUSE	CAVENDISH, L.	80376901	INCR	78/07/20	$10,000
** FELLOWSHIPS **						
WEST VIRGINIA COL. OF GRAD. STUD. INSTITUTE	CIVIL ENGR	STONE, D.	91123001	NEW	78/07/13	$2,419
WEST VIRGINIA COLLEGE OF GRAD. STUDIES INSTITUTE		BRANNON, M.	91128901	NEW	78/07/17	$877
WEST VIRGINIA COLLEGE CHARLESTON	FOREST MGMT.	WATSON, R.	91132201	NEW	78/08/21	$1,030
WEST VIRGINIA COLLEGE OF GRAD. STUD. CHARLESTON	ENVIRONMENTAL STUDIES-AIR POLLUTION	BENEDICT, J.	91114301	NEW	78/06/28	$1,728
WEST VIRGINIA COLLEGE OF GRAD. STUDIES INSTITUTE	PLANNING & MANAGEMENT	LITTLE, R.	91116701	NEW	78/06/28	$1,100
WEST VIRGINIA INST. OF TECH MONTGOMERY		SANGANI, P.	91131201	NEW	78/08/23	$4,339

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		W I S C O N S I N				
** RESEARCH **						
MADISON, CITY OF MADISON	TEST FIRING RDF IN AN INDUSTRIAL COAL-FIRED BOILER	BOLEY, G.	80632801	NEW	78/09/07	$399,292
MILWAUKEE CNTY. METRO. SEWER DIST. MILWAUKEE	VERIFICATION OF WATER QUALITY IMPACT RESULTING FROM COMBINED SEWER OVERFLOW USING REAL-TIME DATA	WEILAND, D. G.	80451801	INCR	78/04/20	$45,500
MILWAUKEE COUNTY, WIS. MILWAUKEE	CO-FIRING OF DROSS FROM A REFUSE DERIVED FUEL PRODUCING PLANT WITH COAL ON A TRAVELING-GRATE SPREADE	REHM, F.	80633601	NEW	78/09/01	$359,000
WISCONSIN, UNIV. OF MADISON	IMPACT OF COAL FIRED POWER PLANTS ON THE ENVRN.	LOUCKS, ORIE	80397103	INCR	78/07/20	$45,557
WISCONSIN, UNIV. OF MADISON	HEAVY METAL BIOAVAILABILITY IN SLUGED-AMENDED SOILS	KEENEY, D.	80461402	CONT	78/08/02	$85,348
WISCONSIN, UNIV. OF MADISON	DEVELOPMENT OF A STANDARD LEACHING TEST	HAM, R. K.	80477301	INCR	78/09/13	$9,400
WISCONSIN, UNIV. OF MADISON	COAL FIRED STEAM PLANTS: HUMAN AND EVIRONMENTAL EXPOSURE TO AIR AND WATER POLLUTANTS	CHESTERS, G.	80613701	NEW	78/07/12	$275,000
WISCONSIN, UNIV. OF SUPERIOR	ESTIMATES OF NO EFFECT CONCENTRATIONS OF SELECTED PESTICIDES IN FRESHWATER ORGANISMS	CALL, DANIEL	88002001	NEW	78/06/27	$168,270
** DEMONSTRATION **						
WISCONSIN DEPT. OF NATURAL RESOURCES MADISON	BUGLE LAKE REHABILITATION PROJECT	EARL, A.	80574201	NEW	78/09/14	$250,000
** TRAINING **						
MARQUETTE UNIV. MILWAUKEE	TRAINING IN WATER POLLUTION CONTROL AND WATER SUPPLY	KIPP, R.	90090201	NEW	78/08/17	$21,850

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		WISCONSIN				
** TRAINING **						
WISCONSIN ASSOC. OF CONSR. DIST. MADISON	STATEWIDE PUBLIC PARTICIPATION IN WATER QUALITY MANAGEMENT IN WISCONSIN	SAVAGE, E.	90084101	NEW	78/06/22	$7,000
WISCONSIN, UNIV. OF MADISON	FACILITY PLANNING WORKSHOP SERIES FP201	QUIGLEY, J.	90082901	NEW	78/05/19	$49,523
WISCONSIN, UNIV. OF MADISON	PROFESSIONAL TRAINING IN ANALYSIS AND DESIGN OF WATER SUPPLY AND POLLUTION CONTROL SYSTEMS	POLKOWSKI, L.	90091601	NEW	78/09/25	$24,842
** FELLOWSHIPS **						
WISCONSIN, UNIV. OF MADISON	METEOROLOGY	ADAMSKI, W.	91121201	NEW	78/06/27	$1,160
WISCONSIN, UNIV. OF MADISON	CIVIL & ENVIRONMENTAL ENGINEERING	HANSMANN, D.	91125101	NEW	78/07/14	$1,983
WISCONSIN, UNIV. OF MADISON	CIVIL & ENVIRONMENTAL ENGINEERING	SCHAEFER, R.	91125201	NEW	78/06/23	$1,316
WISCONSIN, UNIV. OF MADISON	MICROBIOLOGY	LEWIS, J.	91125301	NEW	78/06/27	$1,190
WISCONSIN, UNIV. OF MADISON	WATER RESOURCES MANAGEMENT	HEISER, D.	91125401	NEW	78/09/18	$2,380
WISCONSIN, UNIV. OF MADISON	ENVIRONMENTAL STUDIES	HOLLENZER, K.	91127601	NEW	78/07/10	$1,980

APPLICANT / MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		W Y O M I N G				
** RESEARCH ** WYOMING, UNIV. OF LARAMIE	METHODS DEVELOPMENT FOR ASSESSING TRADEOFFS IN ENVRN. MGMT.	CROCKER, T.	80505901	INCR	78/09/13	$24,657

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
		G U A M				
** FELLOWSHIPS **						
GUAM, UNIV. OF AGANA	MS/BIOLOGY	DETERMAN, T.	91115601	INCR	78/08/01	$2,077

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
	VIRGIN ISLANDS					
** RESEARCH ** VIRGIN ISLANDS, COLLEGE OF THE ST. THOMAS	ENVIRONMENTAL EFFECTS AND ACCEPTABILITY OF RUM DISTILLERY EFFLUENTS	CANOY, M.	80611001	NEW	78/05/05	$119,875

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
	FOREIGN COUNTRIES CANADA					
** RESEARCH **						
TORONTO, UNIV. OF TORONTO	STUDY OF THE MECHANISM AND RATES OF VOLATILIZATION OF CONTAMINANTS FROM WATER BODIES	MACKAY, D.	80515002	CONT	78/07/20	$60,000

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
	FOREIGN COUNTRIES ISRAEL					
** RESEARCH **						
HEBREW UNIV. JERUSALEM	DEVELOPMENT OF METHODS FOR THE DETECTION & INACTIVATION OF VIRUSES IN VARIOUS WATERS	SHUVAL, H. I.	80351003	INCR	78/09/28	$59,370

APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
	F O R E I G N C O U N T R I E S NEW ZEALAND					
** RESEARCH **						
AUCKLAND, UNIV. OF AUCKLAND	HUMAN CADMIUM EXPOSURE AND CANCER	KJELLSTROM, T.	80603601	NEW	78/08/31	$31,400

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APPLICANT MUNICIPALITY	TITLE	PROJECT DIRECTOR / FELLOW	GRANT NO	TYPE OF GRANT	DATE OF AWARD	AMOUNT OF GRANT AWARD
	F O R E I G N C O U N T R I E S YUGOSLAVIA					
** RESEARCH **						
YUGOSLAV ACADEMY OF SCI & ARTS ZAGREB	TOXICOLOGY OF PESTICIDES	REINER, E.	80453903	CONT	78/05/19	$25,000

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**PROJECT: 01188-DETECTION OF CARCINOGENS IN PUBLIC WATER SUPPLIES AND SOURCES WITH
BACTERIAL AND MAMMALIAN CELL MONITORS
STARTING/ COMPLETION DATE : 06/73 - 09/78 : FUNDING : ESTIMATED - FY78 / $ 70000
TASK CODE=D6148-068 **EPA=R800188-03 ** (GRANT) PRIOR FY77 / $ 147000

EPA OFFICER.: GF CRAUN EPA/HERL - CINC
INVESTIGATOR.: W PELON LOUISIANA STATE UNIV SCH OF MED/MICROBIOL DEPT
MILESTONES...: 06/77 -PAPER STUDY ON LOWER MISS. RIVER WATER SUPPLIES
09/78 -PROJECT COMPLETED
PLAN ID.....: (AP-6148)(DU-C110) WATER SUPPLY - HEALTH EFFECTS RESEARCH
MANDATE.....: 10-13 SOLID WASTE DISPOSAL ACT
CURR. RESULTS: ALL SUPPLIES CONTACTED AND ARE SENDING SAMPLES. 0006
ORDIS CODES..: RECN-001188 SSIE-GMA 4365 1 EPA -R800188-03 TASK-D6148-068
ORD -RD10830-1078 MAND-10-13 AP -6148
DU -C110 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVES: WATER SUPPLIES ARE TO BE SCREENED FOR MUTAGENIC ACTIVITY USING HISTIDINE-DEPENDENT MUTANT STRAINS OF SALMONELLA TYPHIMURIUM. APPROACH: TWELVE PAIRS OF COUNTIES WITH HIGH AND LOW CANCER MORTALITY HAVE BEEN SELECTED AND MATCHED FOR DEMOGRAPHIC CHARACTERISTICS. SAMPLES FROM PUBLIC WATER SUPPLIES IN THESE COUNTIES WILL BE ANALYZED EVERY TWO MONTHS FOR MUTAGENIC ACTIVITY. PROGRESS: ALL SUPPLIES HAVE BEEN CONTACTED AND ARE ROUTINELY SENDING SAMPLES.

**PROJECT: 03411-IRRIGATION RETURN FLOW QUALITY LITERATURE ABSTRACTING

STARTING/ COMPLETION DATE : 11/78 - 10/79 : FUNDING : ESTIMATED - FY78 / $ 26902
TASK CODE=L770A-1-28 **EPA=R800426-07 ** (GRANT) PRIOR FY /

EPA OFFICER,: AL WOOD EPA/ERL - ADA
INVESTIGATOR,: GV SKOGERBOE COLORADO STATE UNIV SCH OF AGRIC SCI
WR WALKER COLORADO STATE UNIV SCH OF AGRIC SCI
MILESTONES,..: 10/79 -FINAL REPORT
PLAN ID,.....: (AP=770A)(DU=B133) IRRIGATED CROP PRODUCTION
MANDATE,.....: 20-60 AA FOR RESEARCH AND DEVELOPMENT
ORDIS CODES,.: RECN=003411 SSIE=ZZ 528 EPA =R800426-07 TASK=L770A-1-28
ORD =RL10C30-2078 MAND=20-60 AP =770A
DU =B133 LABT=ALW

PROJ STATUS,.: PROJECT=ACTIVE DATA=ORIGINAL CATEGORY=RESEARCH
ABSTRACT,....: OBJECTIVES: RESEARCH RELATED TO THE QUALITY OF IRRIGATION RETURN FLOW IS BEING CARRIED ON BY AT LEAST 35 DIFFERENT INSTITUTIONS THROUGHOUT THE 17 WESTERN UNITED STATES. THE RESULT OF THE RESEARCH ARE REPORTED IN APPROXIMATELY 100 PERIODICALS, INCLUDING EXPERIMENT STATION BULLETINS, TECHNICAL REPORTS, MAGAZINES, ETC. UNDER SUCH CIRCUMSTANCES, IT IS VIRTUALLY IMPOSSIBLE FOR RESEARCH MANAGEMENT AGENCIES TO KEEP TRACK OF RESEARCH PROJECTS. THEREFORE, THE OBJECTIVE OF THIS PROPOSED PROJECT IS TO FILL IN THE COMMUNICATION GAP BY PROVIDING CURRENT ABSTRACTS OF ARTICLES PERTAINING TO IRRIGATION RETURN FLOW QUALITY. APPROACH: ARTICLES PERTAINING TO THE QUALITY OF IRRIGATION RETURN FLOWS ARE ABSTRACTED, AND KEYWORDS AND INDEX TERMS ARE PROVIDED TO WRSIC AND THE ADA LABORATORY OF EPA. THE NUMBER OF ARTICLES ON THIS SUBJECT HAS DOUBLED IN THE PAST SIX YEARS. THIS PROPOSAL WOULD PRODUCE A REPORT EACH YEAR COVERING ONE CALENDAR YEAR OF IRRIGATION RETURN FLOW QUALITY LITERATURE ABSTRACTING. CURRENT PLANS: ARTICLES ARE NOW BEING OBTAINED FOR THE CALENDAR YEAR OF 1978. ALL ABSTRACTS WILL BE PREPARED ON THE FORMS USING THE WRSIC FORMAT. KEY WORDS AND CLASSIFYING TERMS FOR THE ARTICLES WILL BE SELECTED BY THE ABSTRACTOR. THIS ASPECT OF THE PROJECT WILL BE CAREFULLY MONITORED BY THE PROJECT DIRECTOR. ABSTRACTS AND COPIES OF THE ARTICLES ABSTRACTED WILL BE SUBMITTED TO WRSIC AND A FINALIZED REPORT WILL BE SUBMITTED FOR PUBLICATION TO EPA FOR DISTRIBUTION TO RESEARCHERS AND RESEARCH MANAGEMENT AGENCIES.

**PROJECT: 01867-OPTICAL EFFECTS OF ATMOSPHERIC AEROSOL

STARTING/ COMPLETION DATE : 01/75 - 09/78 : FUNDING : ESTIMATED - FY78 / $ 0
TASK CODE=G603A-AG-11 **EPA=R800665-13 ** (GRANT) PRIOR FY77 / $ 160000

EPA OFFICER,: T ELLESTAD EPA/ESRL - RTP
INVESTIGATOR,: AP WAGGONER UNIV OF WASHINGTON ENG DEPT
RJ CHARLSON UNIV OF WASHINGTON ENG DEPT
MILESTONES,..: 09/78 -ORD REPORT ON ANTHROPOGENIC CONTRIBUTION TO VISIBILITY LOSS
PLAN ID,.....: (AP=603A)(DU=A125) ATMOSPHERIC PROCESSES AND EFFECTS
MANDATE,.....: 10-02 CLEAN AIR ACT
10-02 CLEAN AIR ACT
ORDIS CODES,.: RECN=001867 SSIE=GMA 2652 3 EPA =R800665-13 TASK=G603A-AG-11
ORD =RG10830-1078 LABN=G603A-AE-18 MAND=10-02
ORD =RG10830-1078 LABN=G625B-EA-14 MAND=10-02 AP =603A
DU =A125 LABT=ALW
PROJ STATUS,.: PROJECT=ACTIVE DATA=ORIGINAL CATEGORY=RESEARCH
ABSTRACT,....: THIS CONTINUES OUR PAST STUDIES RELATING AEROSOL SOURCES, PHYSICAL AND CHEMICAL PROPERTIES OF THE PARTICLES, EFFECTS OF RELATIVE HUMIDITY TO ATMOSPHERIC OPTICAL PROPERTIES SUCH AS RADIATIVE CLIMATE AND VISIBILITY. INCLUDED WILL BE STUDIES OF THE RELATIONSHIPS OF PARTICLE PROPERTIES AND SYNOPTIC SCALE TRANSPORT.

**PROJECT: 00192-ACOUSTICAL SYSTEM TO PREVENT HAZARDOUS MATERIAL DIKE FAILURES

STARTING/ COMPLETION DATE : 06/73 - 09/79 : FUNDING : ESTIMATED - FY78 / $ 5000
TASK CODE=B610A-191 **EPA=R802511-01 ** (GRANT) PRIOR FY77 / $ 205000

EPA OFFICER,: JE BRUGGER EPA/IERL - CINC
INVESTIGATOR,: RM KOERNER DREXEL UNIV
AE LORD DREXEL UNIV
MILESTONES,..: 09/79 -FINAL REPORT RECEIVED
PLAN ID.....: (AP-610A)(DU-B118) HAZARDOUS MATERIAL INCIDENTS (WATER)
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
20-10 AA FOR WATER AND HAZARDOUS MATERIALS
CURR. RESULTS: SYSTEM OPERATIONAL, USED AT 25 SITES; 3 FOUND 0005
UNSTABLE; NO SPILLAGE , SEVERAL CORP INVESTIGATING 0005
INSTALLING SYSTEM 0005
ORDIS CODES,.: RECN-000192 SSIE-ZZ 199 EPA -R802511-01 TASK-B610A-191
ORD -RB10C30-5078 MAND-10-01 MAND-20-10
AP -610A DU -B118 LABT-EMI

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
COMMENT.....: XV FLOOD DAMAGE FROM DAM FAILURES 0005
HAZARDOUS WASTES 0005

ABSTRACT.....: DEVICES TO PROVIDE EARLY WARNING OF POTENTIAL SPILLS OF IMPOUNDED HAZARDOUS MATERIALS WILL BE DEVELOPED AND DEMONSTRATED. THE TECHNIQUE TO BE USED IS BASED UPON THE DETECTION OF STRESS WAVES (ACOUSTICAL EMISSIONS) THAT ARE GENERATED BY INTERPARTICLE (SHEARING) MOVEMENT WITHIN THE EARTHEN (SOIL) DIKE MATERIAL AS THE MATERIAL REACTS TO ACCOMMODATE TO THE STRESS APPLIED BY THE PRESSURE OF THE STORED HAZARDOUS MATERIALS. THE ACOUSTICAL EMISSIONS ARE MOST INTENSE DURING CHANGE IN STRESS LOADING BUT ALSO CONTINUE DURING THE RATHER LONG PERIODS OF RELAXATION (ACCOMMODATION AND PARTICLE REARRANGEMENT) THAT OCCUR SUBSEQUENTLY TO CHANGES IN STRESS (LOADING). THE BEHAVIOR HAS BEEN CORRELATED WITH STRESS LEVEL FOR MANY TYPES OF SOILS USED TO CONSTRUCT EARTHEN DAMS. METAL ACOUCTICAL "WAVE GUIDES" ARE INSERTED INTO THE DIKES AND THE TRANSMITTED SOUNDS (RANGE 500 HZ (CYCLES/SEC) TO 2 KHZ) ARE CONVERTED TO ELECTRICAL ANALOGUES BY A PIEZOELECTRIC TRANSDUCER AND RECORDED AND ANALYZED. INTERPARTICLE FRICTIONAL ACOUSTICAL EMISSIONS IN SANDY SOILS, AS WELL AS COHESIVE BOND BREAKING IN CLAY SOILS, ARE DETECTABLE. THE PROJECT IS DIVIDED INTO TWO CONSECUTIVE PHASES, THE FIRST OF WHICH INCLUDES LABORATORY STUDIES ON SOIL SAMPLES AND PRELIMINARY FIELD TESTING ON ACTUAL EARTHEN DIKES. THE SECOND PHASE CONTINUES THE LABORATORY WORK AND EXPANDS THE FIELD TESTING TO A NUMBER OF DIKES OVER A LONG TIME PERIOD. THE PRODUCT OF THIS PROJECT WILL BE A REPORT AND A PORTABLE, EASY-TO-USE, EARLY WARNING DEVICE TO IDENTIFY PRONE-TO-FAILURE DIKES, OR SECTIONS THEREOF, AND THEREBY TO WARN OF POTENTIAL HAZARDOUS MATERIAL SPILL SITUATIONS. THE SYSTEM IS NOW OPERATIONAL AND HAS BEEN USED AT TWENTY-FIVE SITES; THREE OF THESE WERE FOUND TO BE UNSTABLE AND PROMPT PREVENTIVE ACTION WAS TAKEN SO THAT SPILLAGES/DIKE FAILURES DID NOT OCCUR. SEVERAL CORPORATIONS IN THE CHEMICAL PROCESSING AND METAL/NON-METAL MINING INDUSTRIES ARE INVESTIGATING/INSTALLING THE SYSTEM.

**PROJECT: 01278-AN ENVIRONMENTAL HEALTH STUDY OF LEAD IN TEETH

STARTING/ COMPLETION DATE : 06/74 - 10/78 : FUNDING : ESTIMATED - FY78 / $ 6600
TASK CODE=D625F-014 **EPA=R802890-03 ** (GRANT) PRIOR FY77 / $ 65889

EPA OFFICER,: JF STARA EPA/HERL - CINC
INVESTIGATOR,: DR WILKINSON DELAWARE STATE COLLEGE UNDERGRADUATE SCH
MILESTONES,..: 06/74 -INITIATE STUDY
10/78 -COMPLETE STUDY
PLAN ID.....: (AP=625F)(DU=N140) AIR, WATER AND MULTI-ROUTE EXPOSURE & THEIR EFFECTS (HEALTH)
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
CURR. RESULTS: COMPLETION OF ALL LAB ANALYSES AND COMMENCEMENT 0008
OF FINAL REPORT PREP. 0008
ORDIS CODES,.: RECN-001278 SSIE-GMA 5370 EPA -R802890-03 TASK-D625F-014
ORD -RD10830-1078 MAND-10-01 AP -625F
DU -N140 LABT-HEE

PROJ STATUS,.: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE PROPOSED RESEARCH PROGRAM IS DESIGNED TO DETERMINE LEAD CONCENTRATION IN DECIDUOUS TEETH OF CHILDREN UNDER AGE 6, AS WELL AS IN CONTAMINATING DUST SAMPLES FROM THE HOMES OF THE DONORS AND AIR SAMPLES FROM THE IMMEDIATE AREA. IN ADDITION, AUTOMOBILE TRAFFIC RATES IN THE IMMEDIATE AREA WILL BE STUDIED AND SOCIO-ECONOMIC DATA COLLECTED ON THE FAMILIES OF CHILDREN UNDER STUDY. THE TEETH SAMPLES WILL BE COLLECTED IN BIRMINGHAM, ENGLAND, A CITY WHICH OFFERS A UNIQUE LABORATORY FOR SUCH A STUDY, I.E. A TREMENDOUSLY LARGE TRAFFIC CLOVERLEAF, AROUND WHICH ARE CONSTRUCTED MANY HIGH-RISE APARTMENTS, AND A STATE HOUSING DEVELOPMENT. IN ADDITION ENGLAND OFFERS A STATE HEALTH PROGRAM OFFERING PERSONAL INFORMATION ON DONORS AND THEIR FAMILIES. SAMPLES OF TEETH WILL BE COLLECTED IN ENGLAND, CODED, AND MAILED ALONG WITH DATA TO DELAWARE STATE COLLEGE WHERE THEY WILL BE FREEZE-GROUND, PUT INTO SOLUTION AND VOLUMETRICALLY BROUGHT UP TO A PREDETERMINED VOLUME. THE CONCENTRATION OF LEAD WILL BE DETERMINED THROUGH THE USE OF A JARREL-ASH 810 ATOMIC ABSORPTION SPECTROPHOTOMETER. THE RESULTS WILL ADD TO KNOWLEDGE PRESENTLY BEING OBTAINED CONCERNING THE ABILITY TO DETERMINE LEAD ACCUMULATED IN THE BODY BY A TECHNIQUE WHICH WILL CAUSE LITTLE OR NO DAMAGE TO THE DONOR. THE CORRELATION BETWEEN AUTOMOBILE TRAFFIC, LEAD ACCUMULATION LEVELS AND MORBIDITY PATTERNS SHOULD BE SHOWN. PROGRESS THROUGH FALL, 1978 INCLUDES COMPLETION OF ALL LABORATORY ANALYSES AND COMMENCEMENT OF FINAL REPORT PREPARATION.

**PROJECT: 03704-EFFECT OF CYANIDE ON FRESHWATER INVERTEBRATES

STARTING/ COMPLETION DATE : 12/73 - 09/78 : FUNDING : ESTIMATED - FY78 / $ 5000
TASK CODE=N608A-075 **EPA=R802914-03 ** (GRANT) PRIOR FY77 / $ 312200

EPA OFFICER.: R DRUMMOND EPA/ERL - DULUTH
INVESTIGATOR.: L SMITH UNIV OF MINNESOTA ENTOMOLOGY DEPT
MILESTONES...: 09/78 -FINAL REPORT
PLAN ID.....: (AP=608A)(DU=B115) FRESHWATER ECOLOGICAL PROCESSESS & EFFECTS
MANDATE.....: 30-99 OGY-CHEMISTRY 0045
ORDIS CODES..: RECN-003704 SSIE-GMA 4427 1 EPA -R802914-03 TASK-N608A-075
ORD -RN10B30-3078 MAND-30-99 AP -608A
DU -B115 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVES OF THIS PROJECT ARE TO DETERMINE THE ACUTE AND CHRONIC EFFECTS OF CYANIDE, CYANIDE COMPLEXES, AND OTHER INORGANIC AND ORGANIC MATERIALS ON FRESHWATER FISH AND INVERTEBRATES. SUBSIDIARY OBJECTIVES ARE (A) TO DETERMINE EFFECTS OF TEMPERATURE, PH, AND OXYGEN ON CYANIDE TOXICITY; (B) TO DETERMINE ADDITIVE OR SYNERGISTIC RELATIONSHIPS BETWEEN HEAVY METALS AND CYANIDE; (C) TO DETERMINE WHICH LIFE HISTORY STAGES OF FISH AND INVERTEBRATES ARE THE MOST SENSITIVE; (D) TO DETERMINE APPLICATION FACTORS WHICH CAN BE APPLIED TO SHORT TERM TEST RESULTS TO PREDICT SAFE LEVELS OF CYANIDE OR CYANIDE COMPLEXES; (E) TO DETERMINE CUMULATIVE EFFECTS OF CYANIDE ON SUCCESSIVE GENERATIONS OF FISH; (F) TO DETERMINE THE ACUTE TOXICITY OF VARIOUS COMPOUNDS TO DAPHNIA MAGNA AND FATHEAD MINNOWS; (G) TO DETERMINE THE EFFECTS OF THESE MATERIALS ON THE EMBRYOS AND THE LARVAE OF FATHEAD MINNOWS AND, (H) TO DETERMINE THE EFFECTS OF THESE MATERIALS ON DAPHNIA MAGNA IN A LIFE CYCLE TEST. THESE OBJECTIVES ARE CONSIDERED TO BE IMPORTANT BECAUSE CHRONIC EFFECTS OF CYANIDE AND MANY OTHER TOXICANTS HAVE NOT BEEN DESC

**PROJECT: 00557-EVALUATION AND TECHNOLOGY TRANSFER OF THE SWIRL CONCENTRATOR PRINCIPLE

STARTING/ COMPLETION DATE : 01/75 - 06/79 : FUNDING : ESTIMATED - FY78 / $ 22000
TASK CODE=C611A-7222 **EPA=S803157 ** (GRANT) PRIOR FY77 / $ 93200

EPA OFFICER.: H MASTERS EPA/MERL - CINC
INVESTIGATOR.: RH SULLIVAN AMERICAN PUBLIC WORKS ASSN
MILESTONES...: 07/76 -SWIRL DEGRITTER EVALUATION COMPLETE
10/76 -SWIRL PRIMARY SEPARATOR EVALUATION COMPLETE
15/77 -FINAL REPORT (DEGRITTER)
10/77 -START OPTIMIZATION WORK AND DEVELOPMENT OF TEXTBOOK
10/78 -OPTIMIZATION WORK COMPLETED
06/79 -SWIRL DESIGN TEXTBOOK PUBLISHED
PLAN ID.....: (AP-611A)(DU-B106) URBAN RUNOFF POLLUTION CONTROL
FINAL OUTPUT.: SWIRL DESIGN TEXTBOOK 0012
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-000557 SSIE-ZZ 406 EPA -S803157 TASK-C611A-7222
ORD -RC10C30-1078 MAND-10-01 AP -611A
DU -B106 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OVERALL OBJECTIVE OF THIS DEMONSTRATION PROJECT IS TO PROVIDE VEHICLES FOR THE RAPID DISSEMINATION OF INFORMATION CONCERNING THE SWIRL CONCENTRATOR AND THE HELICAL BEND REGULATOR. TECHNOLOGY TRANSFER IN THE FIELD OF PUBLIC WORKS IS BEST ACCOMPLISHED BY EVALUATION OF PROTOTYPE OR FULL-SIZE UNITS AND BY CONTACT WITH THE ENGINEERS WHO MUST PLAN AND DESIGN POLLUTION CONTROL FACILITIES. THE FOUR PARTS OF THIS PROPOSAL ARE DESIGNED TO PROVIDE THE BASIS FOR TRANSFER OF THE TECHNOLOGY TO THE PROFESSION. THE FOUR PARTS ARE: A. EVALUATION OF A SWIRL CONCENTRATOR GRIT CHAMBER; B. EVALUATION OF A SWIRL CONCENTRATOR PRIMARY TECHNICAL DEVICE; C. PREPARATION OF A TEXTBOOK ON DESIGN OF FACILITIES UTILIZING SECONDARY MOTIONS; D. OPTIMIZE, THROUGH LABORATORY CONFIRMATION, THE SWIRL DESIGN CURVES TO COVER SMALLER TREATMENT INFLOW CAPACITIES THAN NOW EXISTS.

**PROJECT: 03001-WATER QUALITY STUDIES ON THE RIVER NILE AND LAKE NASSER

STARTING/ COMPLETION DATE : 11/74 - 10/80 : FUNDING : ESTIMATED - FY78 / $ 22000
TASK CODE=K609A-058 **EPA=R803291-04 ** (GRANT) PRIOR FY77 / $ 34220

EPA OFFICER,:	HM SANDERS	EPA/ERL - ATHENS	
INVESTIGATOR,:	KH NANCY	UNIV OF MICHIGAN	SCH OF PUB HLTH
	MS HILBERT	UNIV OF MICHIGAN	SCH OF PUB HLTH
	PG MEIER	UNIV OF MICHIGAN	SCH OF PUB HLTH
	RA DEININGER	UNIV OF MICHIGAN	SCH OF PUB HLTH
	WJ WEBER	UNIV OF MICHIGAN	SCH OF PUB HLTH
MILESTONES,..:	10/76 -1ST PROGRESS REPORT		
	10/77 -2ND PROGRESS REPORT		
	10/78 -3RD PROGRESS REPORT		
	10/79 -4TH PROGRESS REPORT		
	10/80 -FINAL REPORT ON MANAGEMENT OF THE PL480 PROJECT		
PLAN ID.....:	(AP-609A)(DU-B106) SOURCES, PROCESSES & SYSTEMS		
MANDATE.....:	20-80 OFFICE OF ADMINISTRATOR		
ORDIS CODES..:	RECN-003001 SSIE-ZZ 341	EPA -R803291-04	TASK-K609A-058
	ORD -RK10C30-2078 MAND-20-80	AP -609A	
	DU -B106 LABT-ALW		

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH

ABSTRACT.....: THIS GRANT PROVIDES U.S. SUPPORT FOR THE PRINCIPAL INVESTIGATOR AND HIS MANAGEMENT NEEDS IN DIRECTING THE PL480 PROJECT SFCP-03-542-1 "WATER QUALITY STUDIES ON THE RIVER NILE AND LAKE NASSER." THE PL480 RESEARCH ADDRESSES THE IMPACTS OF THE ASWAN HIGH DAM ON WATER QUALITY IN LAKE NASSER AND DOWNSTREAM PORTIONS OF THE NILE RIVER. THESE WATER QUALITY IMPACTS ARE MEASURED IN TERMS OF PHYSICAL, CHEMICAL, AND BIOLOGICAL PARAMETERS. IN HUMAN TERMS, IMPACTS ON AGRICULTURE, PUBLIC HEALTH, AND SOCIO-ECONOMIC EFFECTS ARE ALSO BEING EXAMINED. DURING 1975 AND 1976, A COUNTRY-WIDE WATER QUALITY MONITORING NETWORK ALONG THE RIVER NILE AND LAKE NASSER WAS ESTABLISHED. THIS NETWORK IS SUPPLEMENTED BY SPECIAL FUNCTIONAL SURVEYS WHICH INCLUDE PLANKTON, BENTHOS, HYDROPHYTES, AND FISHERIES. THE SCIENTIFIC INFORMATION IS BEING FED TO AN ENVIRONMENTAL INFORMATION STORAGE AND RETRIEVAL SYSTEM, CALLED THE NILE DATA BANK. PUBLIC HEALTH IMPACTS STUDIES HAVE BEEN SOLELY CONCERNED WITH THE EFFECTS OF CHANGES IN WATER RESOURCES ON PARASITIC DISEASES IN RURAL EGYPT. AGRICULTURAL IMPACTS STUDIES ARE BASED ON LABORATORY AND FIELD ASSESSMENT OF THE EFFECTS OF CHANGES IN WATER QUALITY WITH CURRENT AND PROJECTED DEVELOPMENTS ON EGYPTIAN AGRICULTURAL PRODUCTIVITY. SOCIO-ECONOMIC IMPACTS STUDIES ARE CONCERNED WITH THE ASSESSMENT OF ALTERNATIVE DEVELOPMENT STRATEGIES ON ENVIRONMENTAL EFFECTS USEFUL TO THE DECISION MAKER. SCIENTIFIC REPORTS COVERING THE VARIOUS SUB-PROJECT RESULTS WILL BE PRESENTED IN THE UNITED STATES IN SEPTEMBER 1978 AND WILL BE PUBLISHED AS EPA REPORTS.

**PROJECT: 00128-DEVELOPMENT OF METHODS FOR THE DETECTION AND INACTIVATION OF VIRUSES IN VARIOUS WATERS

STARTING/ COMPLETION DATE : 03/75 - 09/79 : FUNDING : ESTIMATED - FY78 / $ 59000
TASK CODE=A713C-32 **EPA=R803510-03 ** (GRANT) PRIOR FY77 / $ 316000

EPA OFFICER,: G BERG EPA/EMSL - CINC
INVESTIGATOR,: MI SHUVAL HEBREW UNIV ENV HLTH LAB
E KATZENELSON HEBREW UNIV ENV HLTH LAB
MILESTONES,..: 02/79 -INTERIM REPORT: ORGANIC FLOCCULATION METHOD FOR VIRUS CONC,
10/79 -FINAL REPORT: METH, FOR DETECTION OF WATER-BORNE VIRUSES
PLAN ID.....: (AP-713C)(DU-B127) PLAN 713C
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES,.: RECN-000128 SSIE-ZZ 462 EPA -R803510-03 TASK-A713C-32
ORD -RA10C30-5078 LABN-A612 -035 MAND-10-01
AP -713C DU -B127 LABT-MTS

PROJ STATUS,.: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OVERALL OBJECTIVES OF THIS PROJECT ARE: A) TO DEVELOP FURTHER AND TO REFINE EFFICIENT RAPID AND INEXPENSIVE MONITORING METHODS FOR THE DETECTION AND QUANTITATIVE ASSAY OF LOW LEVELS OF VIRUSES IN LARGE VOLUMES OF WATER AND WASTEWATER, AND TO EVALUATE VARIOUS PROMISING VIRUS MONITORING AND DETECTION METHODS BY STANDARDIZED AND CONTROLLED PROCEDURES, B) TO DEVELOP EFFECTIVE AND ECONOMICAL PROCEDURES FOR THE INACTIVATION OF ENTERIC VIRUSES IN WASTEWATER, RENOVATED WATER AND OTHER FORMS OF POLLUTED WATER BY OZONE AND TO ESTABLISH RELIABLE METHODS FOR THE CONTROL AND EVALUATION OF THE PROCESS.

**PROJECT: 02736-GENETIC AND CELLULAR EFFECTS OF MICROWAVE RADIATION

STARTING/ COMPLETION DATE : 06/75 - 06/79 : FUNDING : ESTIMATED - FY78 / $ 3000
TASK CODE=H628A-7413 **EPA=R803561 ** (GRANT) PRIOR FY77 / $ 100000

EPA OFFICER,: CF BLACKMAN EPA/HERL - RTP
INVESTIGATOR,: SK DUTTA HOWARD UNIV LIBERAL ARTS/BOTANY DEPT
MILESTONES,..: 06/79 -FINAL REPORT
PLAN ID.....: (AP-628A)(DU-F105) ASSESSMENT OF THE HEALTH EFFECTS OF EXPOSURE TO RADIANT ENERGY
FINAL OUTPUT,: PUBLICATION OF RESEARCH DATA IN OPEN LITERATURE 0013
MANDATE.....: 20-22 DAA FOR RADIATION PROGRAMS
CURR, RESULTS: INDICATIONS ARE THAT NO CHANGES CAN BE SHOWN IN NOR 0013
CELLULAR PROCESSES THAT COULD NOT BE DUE TO TEMPERA 0013
CHANGES IN MEDIUM, 0013
ORDIS CODES,.: RECN-002736 SSIE-GMA 2191 3 EPA -R803561 TASK-H628A-7413
ORD -RH10830-2078 LABN-H628A-8413 MAND-20-22
AP -628A DU -F105 LABT-HEE

PROJ STATUS,.: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVE/APPROACH: TO DETERMINE WHETHER MICROWAVE RADIATION CAN AFFECT NORMAL CELLULAR PROCESSES ASSOCIATED WITH THE UTILIZATION OF GENETIC INFORMATION, THE APPROACH IS TO USE A BATTERY OF CELLULAR SYSTEMS, HAVING A VARIETY OF GENETIC STRUCTURES AND FUNCTIONS, TO DISTINGUISH BETWEEN PERTURBATIONS CAUSED SOLELY BY TEMPERATURE RISE AND THOSE CAUSED BY OTHER MECHANISMS. FINAL OUTPUT: SCIENTIFIC PUBLICATION OF THE RESEARCH DATA AND INTERPRETATIONS IN THE OPEN LITERATURE, BOTH IN PEER-REVIEWED JOURNALS AND IN EPA TECHNICAL PUBLICATIONS. RESULTS TO DATE: UNDER THE CONDITIONS USED FOR EXPOSURE, INDICATIONS ARE THAT NO CHANGES CAN BE SHOWN IN NORMAL CELLULAR PROCESSES THAT COULD NOT BE DUE TO TEMPERATURE CHANGES IN THE MEDIUM.

**PROJECT: 00567-PROCESS AUTOMATION EVALUATION

STARTING/ COMPLETION DATE : 05/75 - 06/80 : FUNDING : ESTIMATED - FY78 / $ 90000
TASK CODE=C6118-0026 **EPA=S803602-04 ** (GRANT) PRIOR FY77 / $ 317471

EPA OFFICER,: IJ KUGELMAN EPA/MERL - CINC
INVESTIGATOR,: RC POLTA METRO WASTE CONTROL COMM
DA STULC METRO WASTE CONTROL COMM
RE RICE METRO WASTE CONTROL COMM
MILESTONES,..: 07/76 -REPORT ON EXISTING I&A
12/78 -REPORT ON SLUDGE THICKENING
06/79 -REPORT ON VACUUM FILTER
01/80 -FINAL REPORT
PLAN ID.....: (AP-6118)(DU-B106) WASTEWATER TREATMENT TECHNOLOGY PROGRAMS
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES,.: RECN-000567 SSIE-ZZ 403 EPA -S803602-04 TASK-C6118-0026
ORD -RC10C30-1078 MAND-10-01 AP -6118
DU -B106 LABT-ALW

PROJ STATUS,.: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE PROJECT OBJECTIVES ARE TO DEVELOP AND DEMONSTRATE AUTOMATED CONTROL SCHEMES FOR SLUDGE HANDLING PROCESSES USED AT WASTEWATER TREATMENT PLANTS AND COMPARE THEIR PERFORMANCE AND COST EFFECTIVENESS WITH CONVENTIONAL CONTROL METHODS. SPECIFIC OBJECTIVES FOR THE YEAR 6/22/78 TO 6/21/79 ARE AS FOLLOWS: (1) DEMONSTRATE AUTOMATED CONTROL OF A VACUUM FILTER USING THE CONTROL HARDWARE AND SOFTWARE DEVELOPED AND INSTALLED IN THE PRECEDING YEAR, (2) COMPLETE THE SOFTWARE FOR AND IMPLEMENT AN INTEGRATED CONTROL SYSTEM FOR THE MULTIPLE HEARTH INCINERATOR USED TO BURN THE CAKE PRODUCED IN (1) ABOVE. ALL WORK WILL BE CARRIED OUT AT TREATMENT FACILITIES CURRENTLY OPERATING AND UNDER THE CONSTRAINT THAT NO ADVERSE EFFECTS ON DISCHARGE QUALITY ARE ALLOWABLE.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REPORT: ORDCONV (VERSION V2.0) * OFFICE OF RESEARCH AND DEVELOPMENT *
LIST OF PROJECTS FROM MATCHED GRANT SYSTEM INPUT
RUN DATE: 06/29/79 * O R D I S D A T A E X T R A C T * PAGE- 10

**PROJECT: 00841-ORGANIC N-CHLORO COMPOUNDS IN CHLORINATION OF WATER SUPPLIES

STARTING/ COMPLETION DATE : 02/75 - 06/79 : FUNDING : ESTIMATED - FY78 / $ 35000
TASK CODE=C614A-7190 **EPA=R803631 ** (GRANT) PRIOR FY77 / $ 103702

EPA OFFICER.: EL KATZ EPA/MERL - CINC
INVESTIGATOR.: JC MORRIS HARVARD UNIV SCH OF ARTS & SCI
MILESTONES...: 04/76 -ANNUAL REPORT
PLAN ID.....: (AP-614A)(DU-C110) WATER SUPPLY - WATER TREATMENT & SYSTEMS
MANDATE.....: 10-13 SOLID WASTE DISPOSAL ACT
CURR. RESULTS: CYTOSINE REACTS TO FORM MONO N-CHLORO DERIVATIVE WI 0018
REACTIVITY LIKE THAT OF DICHLORAMINE, NHCL2 AND AN 0018
N-DICHLOR DERIVATIVE WITH REACTIVITY LIKE THAT OF 0018
MONCHLORAMINE, NH2CL. 0018
ORDIS CODES..: RECN-000841 SSIE-GMA 2562 3 EPA -R803631 TASK-C614A-7190
ORD -RC10830-1078 LABN-C614A-0061 MAND-10-13
AP -614A DU -C110 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: FORMATION OF N-CHLORO COMPOUNDS BY THE REACTION OF AQUEOUS CHLORINE WITH NITROGENOUS ORGANIC MATERIAL IN WATER SUPPLIES IS BEING INVESTIGATED. THE OBJECT IS TO ASSESS AND DETERMINE THE EFFECTS THE FORMATION OF SUCH COMPOUNDS MAY HAVE ON ANALYTICAL DETERMINATIONS OF FREE AND COMBINED CHLORINE IN TREATED WATERS AND RELATIONS OF THEIR FORMATION TO THE DISINFECTING PROCESS ITSELF. TWO APPROACHES ARE BEING USED: (1) REACTIONS OF SINGLE ORGANIC COMPOUNDS THOUGHT LIKELY TO BE PRESENT IN SURFACE WATERS, INCLUDING PYRIMIDINES, PURINES AND PYRROLIC COMPOUNDS, ARE BEING STUDIED INDIVIDUALLY; AND (2) SEPARATION AND IDENTIFICATION OF NITROGENOUS ORGANIC COMPOUNDS FROM TYPICAL SURFACE WATERS IS BEING ATTEMPTED. THE MOST INTERESTING FINDING TO DATE IS THAT CYTOSINE REACTS TO FORM A MONO N-CHLORO DERIVATIVE WITH REACTIVITY LIKE THAT OF DICHLORAMINE, NHCL2, AND AN N,N-DICHLOR DERIVATIVE WITH REACTIVITY LIKE THAT OF MONOCHLORAMINE, NH2CL.

**PROJECT: 00626-FIELD STUDY OF NUTRIENT CONTROL IN A MULTI-CELL LAGOON

STARTING/ COMPLETION DATE : 06/75 - 03/79 : FUNDING : ESTIMATED - FY78 / $ 53776
TASK CODE=C611B-7055 **EPA=R803637 ** (GRANT) PRIOR FY77 / $ 157152

EPA OFFICER.: EJ OPATKEN EPA/MERL - CINC
INVESTIGATOR.: W ENGEL CHARLES COUNTY COMM COLL DEPT OF POLLUTION ABATEMENT TECH
MILESTONES...: 08/76 -START OF PHOSPHORUS CONTROL
08/77 -START OF AMMONIA CONVERSION TO NITRATE
08/77 -RELOCATE ALUM ADDITION FOR PHOSPHORUS CONTROL
09/78 -COMPLETE DATA COLLECTION
06/79 -PUBLISH FINAL REPORT
PLAN ID.....: (AP=611B)(DU=B106) WASTEWATER TREATMENT TECHNOLOGY PROGRAMS
MANDATE.....: 30-99 EWATER TREATMENT 0014
ORDIS CODES..: RECN=000626 SSIE=GMA 3974 1 EPA =R803637 TASK=C611B-7055
ORD =RC10B30-3078 MAND=30-99 AP =611B
DU =B106 LABT=ALW

PROJ STATUS..: PROJECT=ACTIVE DATA=ORIGINAL CATEGORY=RESEARCH
ABSTRACT.....: THE PRINCIPAL OBJECTIVE OF THIS PROJECT IS THE DEVELOPMENT OF RELIABLE TECHNIQUES CONSISTENT WITH THE BASIC SIMPLICITY OF LAGOON OPERATION FOR REMOVING PHOSPHORUS AND UNOXIDIZED NITROGEN FROM LAGOON EFFLUENTS. TWO IN-CELL INJECTION POINTS WILL BE EVALUATED TO DETERMINE THE POTENTIAL OF ALUM ADDITION FOR EFFICIENTLY REMOVING PHOSPHORUS FROM WASTEWATER BEING PROCESSED IN A THREE-CELL COMBINED AERATED/FACULTATIVE LAGOON. A SIDESTREAM OF EFFLUENT FROM THE LAST CELL OF THIS TEST LAGOON WILL BE DIVERTED THROUGH A PLASTIC-MEDIA TRICKLING FILTER TOWER TO EVALUATE THE POTENTIAL FOR ACHIEVING NITRIFICATION WITH THIS TYPE OF SECOND STAGE BIOLOGICAL TREATMENT. THE SECONDARY OBJECTIVE IS THE ACQUISITION OF RELIABLE LONG-TERM DATA FROM WELL DESIGNED AND WELL OPERATED THREE-CELL COMBINED AERATED/FACULTATIVE LAGOON NOT RECEIVING ALUM ADDITION WHICH WILL BE OPERATED IN PARALLEL WITH THE TEST SYSTEM AND SERVE AS A CONTROL. ASSESSMENT OF THE EFFECT OF ALUM ADDITION, NOT ONLY ON PHOSPHORUS REMOVAL, BUT ALSO ON SUSPENDED SOLIDS AND ORGANIC REMOVALS, AND DETERMINATION OF ADDITIONAL COST AND OPERATING REQUIREMENTS NECESSITATED BY THE NUTRIENT CONTROL PROCEDURES ARE ADDITIONAL OBJECTIVES.

**PROJECT: 00920-EFFECT OF MOISTURE REGIMEN ON SOLID WASTE STABILIZATION

STARTING/ COMPLETION DATE : 05/75 - 05/79 : FUNDING : ESTIMATED - FY78 / $ 18938
TASK CODE=C618A-7029 **EPA=R803652-02 ** (GRANT) PRIOR FY77 / $ 44399

EPA OFFICER,: DR BRUNNER EPA/MERL - CINC
INVESTIGATOR,: ES CHIAN UNIV OF ILLINOIS SCH OF ENG/CIV ENG DEPT
MILESTONES,..: 11/76 -ANNUAL REPORT
12/77 -ANNUAL REPORT
05/79 -FINAL REPORT: GAS PRODUCED UNDER DIFFERENT MOISTURE REGIMES
PLAN ID,.....: (AP-618A)(DU-D110) SOLID & HAZARDOUS WASTE MANAGEMENT
FINAL OUTPUT,: INTERIM REPORT DESCRIBING CONSTRUCTION AND INITIAL 0020
DECOMPOSITION, FOLLOWED BY FINAL REPORT SUMMARIZING 0020
STUDY. 0020
MANDATE.....: 10-05 RESOURCE CONSERVATION AND RECOVERY ACT
20-14 DAA FOR SOLID WASTE
ORDIS CODES,.: RECN-000920 SSIE-GMA 2505 3 EPA -R803652-02 TASK-C618A-7029
ORD -RC10830-5078 MAND-10-05 MAND-20-14
AP -618A DU -D110 LABT-ALW

PROJ STATUS,.: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVES: THE OBJECTIVES OF THIS STUDY ARE TO DETERMINE GAS PRODUCTION RATES AND TOTAL QUANTITIES FROM MUNICIPAL REFUSE MAINTAINED AT DIFFERENT STEADY STATE MOISTURE CONDITIONS, TO DETERMINE GAS PRODUCTION RATES AND TOTAL QUANTITY OF GAS PRODUCED FROM MUNICIPAL REFUSE UNDER TRANSIENT CONDITIONS OF MOISTURE CONTENT, INCREASE SIMULATING NET INFILTRATION AT LANDFILL SITES, AND TO DETERMINE THE QUANTITY OF ORGANIC MATTER IN LEACHATE DRAINING FROM THE MUNICIPAL REFUSE. APPROACH: A SERIES OF MODIFIED 55-GALLON DRUMS CONTAINING SHREDDED MUNICIPAL REFUSE SERVE AS THE LANDFILL MODELS. SPECIAL FEATURES INCLUDE PROVISION FOR GAS AND LEACHATE COLLECTION, TEMPERATURE MONITORING, UNIFORM WATER DISTRIBUTION, AND SELF CONTAINMENT FOR WEIGHING. FOUR DIFFERENT STEADY STATE MOISTURE CONDITIONS AND THREE DIFFERENT TRANSIENT MOISTURE LOADING RATES ARE TO BE STUDIED. ADDITIONALLY, TWO DIFFERENT AMBIENT TEMPERATURES ARE TO BE STUDIED. GAS AND LEACHATE COMPOSITION AND VOLUMES, AND REFUSE TEMPERATURE ARE TO BE MONITORED. OUTPUTS: AN INTERIM REPORT DESCRIBING CONSTRUCTION AND INITIAL REFUSE DECOMPOSITION WILL BE FOLLOWED BY A FINAL REPORT WHICH SUMMARIZES THE 2-YEAR STUDY. RESULTS WILL BE EVALUATED TO DETERMINE THE MUNICIPAL REFUSE DECOMPOSITION RATES AND TO QUANTITATIVELY ESTABLISH THE EFFECT OF MOISTURE ON THE DECOMPOSITION RATE. THIS INFORMATION, ALTHOUGH OBTAINED ON BENCH SCALE, SHOULD PROVIDE VALUABLE BASIC DATA FOR EVALUATING THE PERFORMANCE OF FIELD LANDFILLS AND FOR DEVELOPMENT OF A MODEL TO PREDICT THE POTENTIAL LEACHATE AND GAS DISCHARGES FROM MUNICIPAL REFUSE.

**PROJECT: 01842-AEROSOL DYNAMICS

STARTING/ COMPLETION DATE : 04/75 - 03/79 : FUNDING : ESTIMATED - FY78 / $ 34000
TASK CODE=G603A-AE-09 **EPA=R803660-03 ** (GRANT) PRIOR FY77 / $ 150000

EPA OFFICER.: JL DURHAM EPA/ESRL - RTP
INVESTIGATOR.: JR BROCK UNIV OF TEXAS SCH OF ENG/CHEM ENG
MILESTONES...: 08/78 -FIELD STUDY TO AEROSOL DEPOSITION RATE
03/79 -ORD FINAL REPORT
PLAN ID.....: (AP=603A)(DU=A125) ATMOSPHERIC PROCESSES AND EFFECTS
MANDATE.....: 10-02 CLEAN AIR ACT
CURR. RESULTS: REPORT ON AEROSOL TRANSPORT OF SULFURIC ACID FROM R 0035
HAS BEEN PRINTED. 0035
ORDIS CODES..: RECN=001842 SSIE=GMA 3880 1 EPA =R803660-03 TASK=G603A-AE-09
ORD =RG10830-1078 LABN=G603A-AC-05 MAND=10-02
AP =603A DU =A125 LABT=ALM

PROJ STATUS..: PROJECT=ACTIVE DATA=ORIGINAL CATEGORY=RESEARCH
ABSTRACT.....: OBJECTIVE OF STUDY IS THE CORRELATION OF OBSERVATIONS OF AEROSOL SIZE AND COMPOSITION DISTRIBUTIONS IN THE ATMOSPHERE AND IN SMOG CHAMBERS WITH THE THEORY OF AEROSOL DYNAMICS THROUGH MATHEMATICAL DESCRIPTIONS AND NUMERICAL SIMULATION OF THE BASIC GROWTH PROCESS OF PARTICULATE MATTER. CURRENTLY SIMULATION HAS BEEN ACHIEVED OF URBAN POLLUTANT EPISODE CONDITIONS USING K THEORY FOR PARTICULATE MATTER. WORK IS UNDERWAY TO INCLUDE SIMULATION OF CHEMICAL PROCESSES OCCURRING IN THE ATMOSPHERE. A REPORT ON AEROSOL TRANSPORT OF SULFURIC ACID FROM A ROADWAY (EPA 600/3-78-043) HAS BEEN PRINTED. A REPORT ON FUGITIVE DUST TRANSPORT IN PHOENIX IS IN PREPARATION. A FIELD EXPERIMENT WILL BE PERFORMED IN AUGUST, 1978 TO MEASURE AEROSOL DEPOSITION RATES OVER SUMMER GRASS IN TEXAS.

**PROJECT: 00350-WATER QUALITY HYDROLOGY AFFECTED BY OIL SHALE DEVELOPMENT

STARTING/ COMPLETION DATE : 06/76 - 06/80 : FUNDING : ESTIMATED - FY78 / $ 30000
TASK CODE=B6238-361 **EPA=R803684-03 ** (GRANT) PRIOR FY77 / $ 150000

EPA OFFICER,: EF HARRIS EPA/IERL - CINC
INVESTIGATOR,: DB MCWHORTER COLORADO STATE UNIV AGRIC ENG DEPT
RC WARD COLORADO STATE UNIV AGRIC ENG DEPT
GV SKOGERBOE COLORADO STATE UNIV AGRIC ENG DEPT
MILESTONES...: 06/80 -FINAL REPORT RECEIVED
PLAN ID.....: (AP-6238)(DU-N105) ENERGY RESOURCE EXTRACTION AND HANDLING, SOLID FOSSIL FUELS
ORDIS CODES..: RECN-000350 SSIE-GMA 5090 EPA -R803684-03 TASK-B6238-361
ORD -R810830-3078 AP -6238 DU -N105
PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OIL SHALE DESPOSITS IN THE UPPER COLORADO RIVER BASIN ARE LOCATED IN THE STATES OF COLORADO, WYOMING, AND UTAH. THE LARGE FRACTION OF POTENTIAL COMMERCIAL DEPOSITS ARE CONTAINED IN THE GREEN RIVER FORMATION IN THE PICEANCE BASIN OF COLORADO, HOWEVER, THE GREEN RIVER FORMATION IS AN EARLY TERTIARY GEOLOGIC UNIT, FORMED IN A DEPOSITIONAL BASIN DURING EOCENE TIME. TOPOGRAPHIC AND STRUCTURAL HIGHS SURROUND THE PICEANCE BASIN ON THE SOUTH, EAST, AND WEST SIDES. BOTH SURFACE AND SUBSURFACE DRAINAGE ARE TOWARD THE NORTH TO THE WHITE RIVER, THE WHITE RIVER IS TRIBUTARY TO THE COLORADO. THE SPECIFIC OBJECTIVES OF THE PROPOSED PROJECT ARE: A) TO GATHER ALL AVAILABLE DATA PERTINENT TO THE PRESENT AND FUTURE ASSESSMENT OF THE WATER QUALITY HYDROLOGY IN THE OIL SHALE REGIONS OF THE UPPER BASIN. THESE DATA WILL BE SOUGHT FROM UNIVERSITIES, FEDERAL AND STATE AGENCIES, AND PRIVATE COMPANIES. B) TO SUMMARIZE AND ANALYZE THESE DATA TOWARD THE IDENTIFICATION OF DATA DEFICIENCIES, NEEDS FOR ADDITIONAL DATA, AND PROCEDURES FOR THE ASSESSMENT OF THE IMPACT ON WATER QUALITY HYDROLOGY. C) TO DEVELOP PROCEDURES FOR THE QUANTITATIVE ASSESSMENT OF THE QUANTITY AND QUALITY OF SURFACE AND SUBSURFACE RUNOFF FROM PROCESSED SHALE RESIDUE AND MINE SPOILS, AND TO VARIFY THESE PROCEDURES USING LARGE VOLUMETRIC LYSIMETERS AT THE ANVIL POINTS, COLORADO FIELD SITE AND BY MEANS OF A MATHEMATICAL MODEL.

**PROJECT: 03293-ADVANCED BIOLOGICAL TREATMENT OF MUNICIPAL WASTEWATERS THROUGH AQUACULTURE

STARTING/ COMPLETION DATE : 06/75 - 02/79 : FUNDING : ESTIMATED - FY78 / $ 80000
TASK CODE=L611C-22 **EPA=R803703 ** (GRANT) PRIOR FY77 / $ 177390

EPA OFFICER,: WR DUFFER EPA/ERL - ADA
INVESTIGATOR,: DH HALL STATE MON & RES DIV WATER QUALITY SERV
J SHELTON STA TRAIN CERT/RES DIV
MILESTONES,..: 06/77 -COMPLETE CONSTRUCTION AND STABILIZATION OF EXPERIMENTAL SYSTEM
04/78 -ESTAB. OPTIMUM OPERATING CONDITIONS/ESTABLISH DESIRABLE STOCKING RATES
02/79 -FINAL REPORT ON TREATMENT EFFICIENCY AND CULTURE TECHNIQUES
PLAN ID.....: (AP=611C)(DU=B106) APPLICATION OF WASTEWATER TO LAND (SOIL TREATMENT SYSTEMS)
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
CURR. RESULTS: STOCKING RATES FOR CULTURE OF FATHEAD MINNOWS DETER 0034
WORK QUALITY CHANGES MONITORED UNDER CONDITIONS OF 0034
POPULATION DENSITIES. 0034
ORDIS CODES,..: RECN=003293 SSIE=GMA 5312 EPA =R803703 TASK=L611C-22
ORD =RL10830-1078 MAND=10-01 AP =611C
DU =B106 LABT=ALM

PROJ STATUS,..: PROJECT=ACTIVE DATA=ORIGINAL CATEGORY=RESEARCH
ABSTRACT.....: THE OBJECTIVE OF THE PROJECT IS TO DETERMINE THE POTENTIAL FOR CULTURE OF FINFISH IN WASTEWATER EFFLUENT FROM A CONVENTIONAL SECONDARY SEWAGE TREATMENT PLANT, ALTHOUGH THE PRIMARY EMPHASIS IS DETERMINATION OF CHANGES IN WATER QUALITY AND DEVELOPMENT OF FISH CULTURE TECHNIQUES, SOME ATTENTION IS BEING GIVEN TO GROWTH RATES AND ECONOMIC EVALUATION OF HARVESTED PRODUCT. THE EXPERIMENTAL UNIT CONSISTS OF EIGHT PONDS, EACH HAVING A SURFACE AREA OF ABOUT ONE-FOURTH ACRE. THE UNIT IS OPERATED AS TWO SERIES OF FOUR PONDS, ONE SERIES UTILIZED FOR CULTURE OF FATHEAD MINNOWS AND THE OTHER SERIES UTILIZED AS THE "CONTROL." EFFLUENT FROM A PRIMARY POLISHING POND, FOLLOWING A HEAVILY LOADED ACTIVATED SLUDGE TREATMENT PLANT, IS INTRODUCED AT THE SAME RATE OF FLOW FOR EACH POND SERIES. FISH STOCKING DENSITIES, WASTEWATER FLOW RATE, SUPPLEMENTAL AERATION, AND POND DEPTH ARE VARIABLES SUBJECT TO REGULATION FOR SPECIFIC TESTS. PROGRESS: STOCKING RATES FOR CULTURE OF FATHEAD MINNOWS HAVE BEEN DETERMINED. DURING THE FIRST PERIOD OF OPERATION, WORK QUALITY CHANGES WERE MONITORED UNDER CONDITIONS OF LOW POPULATION D

**PROJECT: 02774-TUMOROGENIC AND LIFE SPAN SHORTENING EFFECTS OF HTO

STARTING/ COMPLETION DATE : 06/75 - 10/79 : FUNDING : ESTIMATED - FY78 / $ 22712
TASK CODE=H628A-7450 **EPA=R803764 ** (GRANT) PRIOR FY77 / $ 29000

EPA OFFICER,: JM LASKEY EPA/HERL - RTP
INVESTIGATOR,: MW JOHNSON ST, AUGUSTINES COLLEGE UNDERGRADUATE SCH
MILESTONES,..: 06/76 -INITIATE ANIMAL EXPOSURES
06/77 -ANNUAL REPORT
08/77 -COMPLETE ANIMAL EXPOSURES
06/78 -ANNUAL REPORT
06/79 -FINAL REPORT
PLAN ID.....: (AP-628A)(DU-F105) ASSESSMENT OF THE HEALTH EFFECTS OF EXPOSURE TO RADIANT ENERGY
FINAL OUTPUT,: OPEN LITERATURE PUBLICATION 0014
MANDATE.....: 20-22 DAA FOR RADIATION PROGRAMS
CURR, RESULTS: ANIMALS EXPOSED AND IN SECOND YR OF OBSERVATION, 0014
ORDIS CODES,.: RECN-002774 SSIE-ZZ 472 EPA -R803764 TASK-H628A-7450
ORD -RH10C30-2078 LABN-H628A-8450 MAND-20-22
AP -628A DU -F105 LABT-HEE

PROJ STATUS,.: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVES/APPROACH: PREGNANT RATS WILL BE EXPOSED TO HTO IN THE DRINKING WATER THROUGHOUT GESTATION. FEMALES WHO NURSE AT LEAST 50 PERCENT OF THEIR LITTER TO WEANING (21 DAYS) WILL BE OBSERVED FOR TUMOROGENESIS AND LIFE SPAN SHORTENING. FINAL OUTPUT: OPEN LITERATURE PUBLICATION. RESULTS TO DATE: ANIMALS HAVE BEEN EXPOSED AND ARE IN THE SECOND YEAR OF OBSERVATION. THERE IS INSUFFICIENT DATA AT THIS TIME TO DRAW ANY CONCLUSIONS.

1823

**PROJECT: 01996-PHOTON CORRELATION IN LASER DOPPLER SPECTROSCOPY FOR PARTICLE SIZE MEASUREMENT

STARTING/ COMPLETION DATE : 06/76 - 08/79 : FUNDING : ESTIMATED - FY78 / $ 37530
TASK CODE=G7128-BA-015 **EPA=R803765 ** (GRANT) PRIOR FY77 / $ 101657

EPA OFFICER,: WD CONNER EPA/ESRL - RTP
INVESTIGATOR,: A GEORGE NORFOLK STATE COLLEGE DEPT OF PHYSICS
MILESTONES...: 06/77 -COMP. EQUIP. ACQUISITION, THEORETICAL STUDIES/LIT. SEARCH
09/78 -COMPLETE EXPERIMENTAL SET-UP AND PRELIMINARY MEASUREMENTS
09/79 -REPORT ON PROJECT RESULTS
PLAN ID.....: (AP-7128)(DU-A130) CHAR. AND MEASUREMENT METHODS DEVELOPMENT (AIR)
MANDATE.....: 10-02 CLEAN AIR ACT
10-02 CLEAN AIR ACT
CURR. RESULTS: FABRICATION OF BREADBOARD INSTRUMENT COMPLETED, IN 0040
BEING EVALUATED, 0040
FOR EXPERIMENTAL STUDIES. 0010
ORDIS CODES..: RECN-001996 SSIE-GMA 5492 EPA -R803765 TASK-G7128-BA-015
ORD -RG10830-1078 LABN-G7128-BA-32 MAND-10-02
ORD -RG10830-1078 MAND-10-02 AP -7128 DU -A130
LABT-ALM
PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVE OF THE STUDY IS TO EVALUATE LASER DOPPLER SPECTROSCOPY AND PHOTON CORRELATION TECHNIQUES FOR IN-SITU MEASUREMENT OF THE SIZE OF PARTICULATES IN EMISSION SOURCES. THE EXPERIMENTAL STUDY OF THE METHOD IS TO BE CONDUCTED IN THE LABORATORY ON HYDROSOL AND AEROSOL PATICULATES WITH DIFFERENT SIZE AND COMPOSITIONAL CHARACTERISTICS. THE FINAL OUTPUT OF THE STUDY WILL BE A REPORT SHOWING THE APPLICABILITY AND LIMITATION OF THE PROPOSED TECHNIQUE FOR MONITORING PARTICLE SIZE IN STATIONARY SOURCES. MAJOR RESULTS TO DATE ARE: 1. THEORETICAL STUDY OF THE LASER DOPPLER SPECTROSCOPIC METHOD AND CORRELATION TECHNIQUES. 2. SURVEY OF THE PUBLISHED WORK IN THE FIELD. 3. COMPLETION OF EQUIPMENT ACQUISITION AND FABRICATION FOR EXPERIMENTAL STUDIES.

**PROJECT: 00560-CO-DISPOSAL OF SEWAGE SLUDGE AND MUNICIPAL REFUSE

STARTING/ COMPLETION DATE : 06/75 - 06/78 : FUNDING : ESTIMATED - FY78 / $ 10000
TASK CODE=C6118-0016 **EPA=S803769-01 ** (GRANT) PRIOR FY77 / $ 332000

EPA OFFICER,: G STERN EPA/MERL - CINC
INVESTIGATOR,: CE ROGERS SOUTH CHARLESTON SAN BRD CITY HALL
CT MOSES UNION CARBIDE CORP
98 LEVIN UNION CARBIDE CORP
JR MATTHEWS UNION CARBIDE CORP LINDE DIV/PUROX
K YOUNG UNION CARBIDE CORP LINDE DIV/PUROX
MILESTONES...: 06/78 -FINAL REPORT PROJECT ENDED THIS DATE
12/78 -FR PUBLISHED: CODISPOSAL OF SEWAGE SLUDGE & REFUSE-PUROX SYSTEM
PLAN ID.....: (AP-6118)(DU-B106) WASTEWATER TREATMENT TECHNOLOGY PROGRAMS
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-000560 SSIE-GMA 5327 EPA -S803769-01 TASK-C6118-0016
ORD -RC10830-1078 MAND-10-01 AP -6118
DU -B106 LABT-ALM
PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVES OF THIS PROJECT ARE TO CONFIRM AND DEMONSTRATE THE TECHNICAL AND ECONOMIC FEASIBILITY OF DISPOSING OF SEWAGE SLUDE IN COMBINATION WITH MUNICIPAL REFUSE IN THE UNION CARBIDE PUROX SYSTEM, AND TO ESTABLISH THE ENVIRONMENTAL EFFECTS OF THIS MEANS OF DISPOSAL. THE PROJECT WILL BE CARRIED OUT AT UNION CARBIDE CORPORATION'S FULL SCALE TEST FACILITY IN SOUTH CHARLESTON, WEST VIRGINIA.

**PROJECT: 01010-HUMAN ENTERIC VIRUS SURVIVAL IN SOIL FOLLOWING IRRIGATION WITH SEWAGE PLANT EFFLUENTS
STARTING/ COMPLETION DATE : 07/75 - 01/79 : FUNDING : ESTIMATED - FY78 / $ 4663000
TASK CODE=D607A-003C **EPA=R803844-03 ** (GRANT) PRIOR FY77 / $ 295592

EPA OFFICER,: E AKIN EPA/HERL - CINC
INVESTIGATOR,: BP SAGIK UNIV OF TEXAS CTR FOR APPL RES & TECH
CA SORBER UNIV OF TEXAS CTR FOR APPL RES & TECH
BE MOORE UNIV OF TEXAS CTR FOR APPL RES & TECH
WW HAMMOND UNIV OF TEXAS CTR FOR APPL RES & TECH
MILESTONES...: 10/77 -REPORT
04/79 -FINAL REPORT
PLAN ID.....: (AP-607A)(DU-B103) HEALTH EFFECTS: TREATMENT & DISPOSAL OF WASTEWATER & SLUDGE
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
CURR, RESULTS: TWO SITES SELECTED; 9 LYSIMETERS & 6 MONITORING 0002
WELLS INSTALLED, BACKGROUND SAMPLING AND TREATMENT 0002
PLANT CHAR, COMPLETED. 0002
ORDIS CODES..: RECN-001010 SSIE-GMA 5380 EPA -R803844-03 TASK-D607A-003C
ORD -RD10830-1078 MAND-10-01 AP -607A
DU -B103 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVES: THE OVERALL OBJECTIVE OF THIS STUDY IS TO EVALUATE THE SURVIVAL AND TRANSPORT OF ENTERIC VIRUSES AT LAND APPLICATION SITES FOR WASTEWATER FOLLOWING CONVENTIONAL WASTEWATER TREATMENT. SPECIFIC, DETAILED OBJECTIVES ARE: (A) TO DETERMINE THE SURVIVAL OF ENTEROVIRUSES DISTRIBUTED TO THE SOIL FOLLOWING WASTEWATER IRRIGATION; (B) TO FOLLOW THE MOVEMENT OF INDIGENOUS ENTEROVIRUSES AND BACTERIOPHAGES SPECIFIC TO E. COLI THROUGH THE UNSATURATED SOIL ZONE VIA LYSIMETERS; (C) TO ASCERTAIN POSSIBLE MOVEMENT OF INDIGENOUS ENTEROVIRUSES AND BACTERIOPHAGES IN THE GROUNDWATER BENEATH MOVEMENT OF INDIGENOUS ENTEROVIRUSES AND BACTERIOPHAGES IN THE GROUNDWATER BENEATH A WASTEWATER LAND APPLICATION SITE BY SAMPLING MONITORING WELLS; (D) TO CONDUCT A MASS BALANCE OF INDIGENOUS ENTEROVIRUSES ENTERING AND LEAVING THE SITE; (E) AND TO INITIATE THE STUDY OF THE PRESENCE IN WASTEWATER OF SPECIFIC BACTERIAL PATHOGENS AND TO ASCERTAIN THEIR POSSIBLE PRESENCE IN SOILS AND LYSIMETER AND MONITORING WELL WATERS. APPROACH: SEVERAL SITES WOULD BE EVALUATED AS POTENTIAL STUDY SITES. IT WAS PLANNED TO CHARACTERIZE THE TREATMENT FACILITIES, SOILS, IRRIGATION SYSTEMS AND STREAMS AT THE SITES. ANALYSES WOULD BE CONDUCTED FOR CHEMICAL, PHYSICAL AND BIOLOGICAL PARAMETERS. METHODS WOULD BE DEVELOPED TO ADEQUATELY PROCESS ALL TYPES OF SAMPLES ENCOUNTERED. THE UNSATURATED SOIL ZONE PERCOLATE WOULD BE EVALUATED FOR VIRUS TRANSPORT BY LYSIMETERS; THE SATURATED ZONE BY MONITORING WELLS. PROGRESS: TWO SITES HAVE BEEN SELECTED FOR STUDY, ONE OF THE SITES WAS SELECTED FOR INTENSE STUDY DUE TO THE FACT THAT IT HAS A RANGE OF SOIL TYPES AND WASTEWATER IRRIGATION HISTORY, ITS WASTEWATER TREATMENT AND SPRAY IRRIGATION SYSTEMS ARE NEW. THUS, 9 LYSIMETERS TO DEPTHS OF 4.5 FT. AND 6 MONITORING WELLS HAVE BEEN INSTALLED. BACKGROUND SAMPLING AND TREATMENT PLANT CHARACTERIZATION HAS BEEN COMPLETED. SAMPLING AND SAMPLE PROCESSING METHODOLOGY HAS BEEN MODIFIED TO FACILITATE HANDLING OF THE SAMPLES OBTAINED FROM BOTH SITES AND TO OPTIMIZE VIRUS RECOVERY.

164A

**PROJECT: 01877-FORMATION OF ATMOSPHERIC AEROSOLS

STARTING/ COMPLETION DATE : 05/77 - 04/79 : FUNDING : ESTIMATED - FY78 / $ 49000
TASK CODE=G603A-AH-03 **EPA=R803851-03 ** (GRANT) PRIOR FY77 / $ 763000

EPA OFFICER.: WE WILSON EPA/ESRL - RTP
INVESTIGATOR.: KT WHITBY UNIV OF MINNESOTA DEPT OF MECH ENG
MILESTONES...: 04/79 -COMPLETE DATA ANALYSIS
PLAN ID.....: (AP-603A)(DU-A125) ATMOSPHERIC PROCESSES AND EFFECTS
MANDATE.....: 10-02 CLEAN AIR ACT
ORDIS CODES..: RECN-001877 SSIE-GMA 2528 3 EPA -R803851-03 TASK-G603A-AH-03
ORD -RG10830-1078 LABN-G603A-AC-07 MAND-10-02
AP -603A DU -A125 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: AEROSOL SIZE DISTRIBUTIONS HAVE BEEN MEASURED IN THE ST. LOUIS AREA AS PART OF EPA'S PROJECT MISTT USING AIRCRAFT AND GROUND-BASED SELF-CONTAINED MOBILE LABORATORIES. THE UNIVERSITY OF MINNESOTA'S PORTION OF THE PROJECT INCLUDED AEROSOL MEASUREMENTS ABOARD AN AIRCRAFT AND THE OPERATION OF A MOBILE VAN ON THE GROUND UNDER THE PLUMES. THE PAST YEAR WAS DEVOTED PRIMARILY TO DATA ANALYSIS, THE DEVELOPMENT OF NEW ANALYSIS TECHNIQUES AND REPORTING RESULTS OF AEROSOLS DATA OBTAINED OVER THE PAST SEVERAL YEARS IN PROJECT MISTT AND THE ROADWAY AEROSOL STUDY. DURING THE COMING YEAR THE PARTICLE TECHNOLOGY LABORATORY OF THE UNIVERSITY OF MINNESOTA WILL BE MEASURING AEROSOL SIZE DISTRIBUTION FOR EPA'S PROJECT STATE (SULFUR TRANSPORT AND TRANSFORMATION IN THE ENVIRONMENT) IN TENNESSEE AND FOR EPA'S PROJECT SCRUB IN ALABAMA AND MINNESOTA. THE STATE PROGRAM IS DIRECTED TO DESCRIBING REACTIONS AND ATMOSPHERIC PROCESSES AFFECTING PLUME BEHAVIOR OVER TIME SCALES OF 12-96 HOURS AND DISTANCES OUT TO 1000 KM. BY CONTRAST THE SCRIB PROGRAM WILL PROVIDE AN ASSESSMENT OF THE TRANSPORT AND TRANSFORMATION OCCURRING WITHIN A POWER PLANT PLUME WITH AN SO2 SCRUBBER OUT TO DISTANCES OF ABOUT 1000 KM AND TRAVEL TIMES MOSTLY LESS THAN 12 HOURS. RESOURCES WILL BE PROVIDED TO COMPLETE DATA ANALYSIS AND REPORT ON PROJECT MISTT AND TO PARTICIPATE IN THE PLANNING OF PROJECT SCRUB AND THE SUBSEQUENT DATA ANALYSIS. OTHER TASKS INCLUDE THE MEASUREMENT OF GASEOUS AND AEROSOL POLLUTANTS UNDER AND IN PLUMES BEING CHARACTERIZED IN PROJECT STATE AND DEVELOPMENT OF AN AEROSOL MOBILITY CHROMATOGRAPH TO DETERMINE MOLECULAR COMPOSITION OF SULFUR CONTAINING AEROSOLS.

**PROJECT: 01958-MOBILE LABORATORY MEASUREMENTS IN SUPPORT OF PROJECT SCRUB

STARTING/ COMPLETION DATE : 05/77 - 05/78 : FUNDING : ESTIMATED - FY78 / $ 50000
TASK CODE=G625B-EA-34 **EPA=R803851-03 ** (GRANT) PRIOR FY /

EPA OFFICER.: HM BARNES EPA/ESRL - RTP
INVESTIGATOR.: KT WHITBY UNIV OF MINNESOTA DEPT OF MECH ENG
MILESTONES...: 06/78 -FIELD STUDY IN MINNESOTA
08/78 -FIELD STUDY IN TENNESSEE
08/78 -FIELD STUDY IN ALABAMA
01/79 -REPORT ON MINNESOTA STUDY
06/79 -REPORT ON TENNESSEE AND ALABAMA STUDY
PLAN ID.....: (AP-6258)(DU-N140) TRANSPORT AND FATE OF ENERGY-RELATED POLL. IN ECOSYSTEMS
FINAL OUTPUT.: EPA REPORTS AND ARTICLES PUBLISHED IN SCIENTIFIC JO 0037
MANDATE.....: 10-02 CLEAN AIR ACT
CURR. RESULTS: ONE PLUME STUDY COMPLETED IN JUNE; DATA BEING REDUC 0037
ORDIS CODES..: RECN-001958 SSIE-ZZ 155 EPA -R803851-03 TASK-G625B-EA-34
ORD -RG10C30-1078 LABN-G625B-EA-34 MAND-10-02
AP -6258 DU -N140 LABT-ALM

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVE OF THE STUDY IS TO CHARACTERIZE THE GASEOUS AND PARTICULATE CONSTITUENTS AS A FUNCTION OF TIME, DISTANCE AND METEOROLOGICAL CONDITIONS AT TWO POWER PLANTS EQUIPPED WITH WET LIMESTONE SCRUBBERS. THE MEASUREMENTS ARE INTENDED TO PROVIDE AN ASSESSMENT OF THE TRANSPORT AND TRANSFORMATION OCCURRING WITHIN THE PLUMES. THE FINAL OUTPUTS OF THIS TASK WILL BE EPA REPORTS AND ARTICLES PUBLISHED IN VARIOUS SCIENTIFIC JOURNALS. ONE OF THE PLUME STUDIES WAS COMPLETED IN JUNE; THE DATA IS BEING REDUCED. THE OTHER PLUME STUDY IS TO BE CONDUCTED IN LATE AUGUST.

**PROJECT: 01957-PREPARATION OF MOBILE VAN FOR SCRUBBED PLUME STUDY

STARTING/ COMPLETION DATE : 04/77 - 04/78 : FUNDING : ESTIMATED - FY78 / $ 50000
TASK CODE=G6258-EA-33 **EPA=R803851-03 ** (GRANT) PRIOR FY /

EPA OFFICER.: HM BARNES EPA/ESRL - RTP
INVESTIGATOR.: KT WHITBY UNIV OF MINNESOTA DEPT OF MECH ENG
MILESTONES...: 04/78 -CALIBRATION OF GAS ANALYZERS
05/78 -CALIBRATION OF AEROSOL ANALYZERS
07/78 -RECALIBRATION OF ANALYZERS BEFORE SECOND FIELD STUDY
PLAN ID.....: (AP-6258)(DU-N140) TRANSPORT AND FATE OF ENERGY-RELATED POLL. IN ECOSYSTEMS
FINAL OUTPUT.: THE FINAL OUTPUT FOR THIS TASK WILL BE THE PARTICIP 0037
OF THE BAN IN THE PLUME CHARACTERIZATION STUDIES TO 0037
DONE IN THE SUMMER OF 1978. 0037
MANDATE.....: 10-02 CLEAN AIR ACT
CURR. RESULTS: THE VAN HAS BEEN MODIFIED FOR THE PURPOSE OF FILTER 0037
THE ANALYZERS AND DATA ACQUISITION SYSTEMS CALIBRAT 0037
TESTED; THE VAN IS NOW READY FOR THE PLUME STUDIES 0037
DONE IN MINNESOTA AND ALABAMA LATER THIS SUMMER. 0037
ORDIS CODES..: RECN-001957 SSIE-ZZ 156 EPA -R803851-03 TASK-G6258-EA-33
ORD -RG10C30-1078 MAND-10-02 AP -6258
DU -N140 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: AEROSOL SIZE DISTRIBUTIONS HAVE BEEN MEASURED IN ST. LOUIS AS PART OF THE EPA PROJECT MISTT USING GROUND BASED SELF-CONTAINED MOBILE LABORATOREIS. THE UNIVERSITY OF MINNESOTA HAS CONDUCTED STUDIES ABOARD AIRCRAFT AND HAS USED THEIR OWN MOBILE VAN TO CHARACTERIZE THE GASES AND AEROSOLS IN URBAN AND POWER PLANT PLUMES. DURING THE SUMMER OF 1978 THE VAN WILL BE USED IN TWO FIELD STUDIES TO CHARACTERIZE POWER PLANT PLUMES. PREPARATION FOR THESE STUDIES INVOLVES CALIBRATION OF THE AEROSOL ANALYZERS AND GAS ANALYZERS, ACQUISITION OF NEW EQUIPMENT AND REPLACEMENT OF DEFECTIVE PARTS. THE FINAL OUTPUT FOR THIS TASK WILL BE THE PARTICIPATION OF THE VAN IN THE PLUME CHARACTERIZATION STUDIES TO BE DONE IN THE SUMMER OF 1978. THE VAN HAS BEEN MODIFIED FOR THE PURPOSE OF FILTER SAMPLING. THE ANALYZERS AND DATA ACQUISITION SYSTEMS CALIBRATED AND TESTED; THE VAN IS NOW READY FOR THE PLUME STUDIES TO BE DONE IN MINNESOTA AND ALABAMA LATER THIS SUMMER.

**PROJECT: 01932-FORMATION OF ATMOSPHERIC AEROSOLS

STARTING/ COMPLETION DATE : 07/75 - 04/79 : FUNDING : ESTIMATED - FY78 / $ 215000
TASK CODE=G6258-EA-08 **EPA=R803851-03 ** (GRANT) PRIOR FY77 / $ 763000

EPA OFFICER.: WE WILSON — EPA/ESRL - RTP
INVESTIGATOR.: KT WHITBY — UNIV OF MINNESOTA — DEPT OF MECH ENG
PLAN ID.....: (AP-6258)(DU-N140) — TRANSPORT AND FATE OF ENERGY-RELATED POLL. IN ECOSYSTEMS
MANDATE.....: 10-02 CLEAN AIR ACT
ORDIS CODES..: RECN-001932 — SSIE-GMA 3942 1 — EPA -R803851-03 — TASK-G6258-EA-08
ORD -RG10851-1078 — LABN-G6258-EA-15 — MAND-10-02
AP -6258 — DU -N140 — LABT-ALM

PROJ STATUS..: PROJECT-ACTIVE — DATA-ORIGINAL — CATEGORY-RESEARCH
COMMENT.....: G603A-AA-019, $210001 G603A-AA-012, $49000 0037
G603A-AC-007, $50000 0037

ABSTRACT.....: AEROSOL SIZE DISTRIBUTIONS HAVE BEEN MEASURED IN THE ST. LOUIS AREA AS PART OF EPA'S PROJECT MISTT USING AIRCRAFT AND GROUND-BASED SELF-CONTAINED MOBILE LABORATORIES. THE UNIVERSITY OF MINNESOTA'S PORTION OF THE PROJECT INCLUDED AEROSOL MEASUREMENTS ABROARD AN AIRCRAFT AND THE OPERATION OF A MOBILE VAN ON THE GROUND UNDER THE PLUMES. THE PAST YEAR WAS DEVOTED PRIMARILY TO DATA ANALYSIS, THE DEVELOPMENT OF NEW ANALYSIS TECHNIQUES AND REPORTING RESULTS OF AEROSOL DATA OBTAINED OVER THE PAST SEVERAL YEARS IN PROJECT MISTT AND THE ROADWAY AEROSOL STUDY. DURING THE COMING YEAR THE PARTICLE TECHNOLOGY LABORATORY OF THE UNIVERSITY OF MINNESOTA WILL BE MEASURING AEROSOL SIZE DISTRIBUTIONS FOR EPA'S PROJECT STATE (SULFUR TRANSPORT AND TRANSFORMATION IN THE ENVIRONMENT) IN TENNESSEE AND FOR EPA'S PROJECT SCRUB IN ALABAMA AND MINNESOTA. THE STATE PROGRAM IS DIRECTED TO DESCRIBING REACTIONS AND ATMOSPHERIC PROCESSES AFFECTING PLUME BEHAVIOR OVER TIME SCALES OF 12-96 HOURS AND DISTANCES OUT TO 1000 KM. BY CONTRAST THE SCRUB PROGRAM WILL PROVIDE AN ASSESSMENT OF THE TRANSPORT AND TRANSFORMATION OCCURRING WITHIN A POWER PLANT PLUME WITH AN SO2 SCRUBBER OUT TO DISTANCES OF ABOUT 1000 KM AND TRAVEL TIMES MOSTLY LESS THAN 12 HOURS. RESOURCES WILL BE PROVIDED TO COMPLETE DATA ANALYSIS AND REPORT ON PROJECT MISTT AND TO PARTICIPATE IN THE PLANNING OF PROJECT SCRUB AND THE SUBSEQUENT DATA ANALYSIS. OTHER TASKS INCLUDE THE MEASUREMENT OF GASEOUS AND AEROSOL POLLUTANTS UNDER AND IN PLUMES BEING CHARACTERIZED IN PROJECT STATE AND DEVELOPMENT OF AN AEROSOL MOBILITY CHROMATOGRAPH TO DETERMINE MOLECULAR COMPOSITION OF SULFUR-CONTAINING AEROSOLS.

**PROJECT: 00337-MOP - PREMINING PLANNING EASTERN SURFACE COAL

STARTING/ COMPLETION DATE : 06/75 - 08/78 : FUNDING : ESTIMATED - FY78 / $ 10000
TASK CODE=86238-323 **EPA=R803882 ** (GRANT) PRIOR FY77 / $ 287000

EPA OFFICER.: JF MARTIN EPA/IERL - CINC
INVESTIGATOR.: RV RAMANL PENNSYLVANIA STATE UNIV DEPT OF MINING
ML CLAR PENNSYLVANIA STATE UNIV DEPT OF MINING
MILESTONES...: 08/78 -FINAL REPORT RECEIVED
PLAN ID.....: (AP-6238)(DU-N105) ENERGY RESOURCE EXTRACTION AND HANDLING, SOLID FOSSIL FUELS 0015
FINAL OUTPUT.: USER'S MANUAL 0015
MANDATE.....: 30-99 ERN SURFACE COAL MINING
ORDIS CODES..: RECN-000337 SSIE-GMA 5468 EPA -R803882 TASK-86238-323
ORD -RB10830-3078 MAND-30-99 AP -6238
DU -N105 LABT-EMI

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE PURPOSE OF THIS RESEARCH EFFORT IS TO STUDY THE SURFACE MINING OF COAL IN THE EASTERN UNITED STATES AND TO ESTABLISH GUIDELINES FOR DEVELOPING, EVALUATING, AND SELECTING THE LEAST ENVIRONMENTALLY DETRIMENTAL MINING AND RECLAMATION PRACTICES. THE STUDY IS TO CONSIDER THE GEOLOGICAL AND HYDROLOGICAL SETTINGS BEFORE MINING AS THE BASIC INPUTS TO PREMINING PLANNING, AND GUIDELINES WERE TO BE DEVELOPED FOR ASSESSING ALTERNATIVES IN THE AREAS OF SURFACE MINE ENGINEERING, WATER MANAGEMENT, AND LAND USE PLANNING. THE RECOMMENDED METHODS, TECHNIQUES, AND ALTERNATIVES FOR SELECTING AND DESIGNING MINING SYSTEMS WILL BE BASED ON A REVIEW AND CRITICAL EVALUATION OF THE METHODS REPORTED IN THE LITERATURE AND APPLIED IN THE FIELD. THEY WILL BE PRESENTED IN A SERIES OF SIX REPORTS, WHICH TOGETHER MAKE UP A USER'S MANUAL FOR PREMINING PLANNING OF SURFACE COAL MINING OPERATIONS IN THE EASTERN UNITED STATES.

**PROJECT: 01937-MESOSCALE SULFUR BALANCE STUDIES

STARTING/ COMPLETION DATE : 12/75 - 04/79 : FUNDING : ESTIMATED - FY78 / $ 100000
TASK CODE=G6258-EA-14 **EPA=R803887-03 ** (GRANT) PRIOR FY77 / $ 544000

EPA OFFICER,: CF WALTERS EPA/ESRL - RTP
INVESTIGATOR,: JW WINCHESTER FLORIDA STATE UNIV ARTS & SCI/CHEM DEPT
JW NELSON FLORIDA STATE UNIV ARTS & SCI/CHEM DEPT
MILESTONES...: 04/79 -ORD REPORT ON SULFUR IN AEROSOL PARTICLES
PLAN ID.....: (AP-6258)(DU-N140) TRANSPORT AND FATE OF ENERGY-RELATED POLL. IN ECOSYSTEMS
MANDATE.....: 10-02 CLEAN AIR ACT
ORDIS CODES..: RECN-001937 SSIE-GMA 3952 1 EPA -R803887-03 TASK-G6258-EA-14
ORD -RG10830-1078 LABN-G603A-AA-116 MAND-10-02
AP -6258 DU -N140 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: A COMPREHENSIVE STUDY IS BEING CONDUCTED TO CHARACTERIZE THE OCCURRENCE OF SULFUR IN AEROSOL PARTICLES AT SAMPLING STATIONS IN 14 LOCATIONS BETWEEN THE MID-CONTINENT AND EASTERN SEABOARD OF CONTINENTAL U.S.A. ADDITIONAL REMOTE STATIONS IN MARINE AND CONTINENTAL AREAS ARE ALSO BEING OPERATED TO PROVIDE IMPORTANT BACKGROUND INFORMATION. EMPHASIS IS BEING PLACED ON THE CONCENTRATIONS OF SULFUR IN RELATION TO OTHER ELEMENTS PRESENT IN THE AEROSOL AND ON THE TIME VARIABILITY OF THESE CONCENTRATIONS WITH A TIME RESOLUTION OF 2 HOURS. SAMPLING IS BEING CARRIED OUT CONTINUOUSLY AT HEIGHTS FROM GROUND LEVEL TO 30 METERS BY A UNIQUE TIME SEQUENCE FILTER SAMPLER WHICH HAS BEEN DEVELOPED AT FLORIDA STATE UNIVERSITY. ADDITIONAL SAMPLES ARE PLANNED TO BE TAKEN DURING INTENSIVE PERIODS DURING THE YEAR BY CASCADE IMPACTORS AT ABOUT FIVE OF THE FILTER SAMPLING SITES, USING CASCADE IMPACTORS FOR DETERMINATION OF THE PARTICLE SIZE DISTRIBUTION OF SULFUR AND RELATED ELEMENTS. ELEMENTAL ANALYSIS IS PERFORMED USING PROTON INDUCED X-RAY EMISSION, A HIGHLY SENSITIVE TECHNIQUE PERMITTING BOTH THE EXTREMELY SHORT 2-HOUR TIME RESOLUTION ON A CONTINUOUS BASIS FOR FILTER SAMPLES AS WELL AS THE SIZE RESOLUTION OF PARTICLES AS SMALL AS 0.25 MICRON DIAMETER BY CASCADE IMPACTORS. BY MEANS OF THE COMBINATION OF SAMPLING TECHNIQUES, THE IMPACT OF FOSSIL FUEL COMBUSTION AND OTHER ANTHROPOGENIC SOURCES OF SULFUR ON THE NATURAL CHARACTERISTICS OF THE ATMOSPH

**PROJECT: 01874-SULFUR BUDGET IN LARGE PLUMES

STARTING/ COMPLETION DATE : 07/75 - 03/79 : FUNDING : ESTIMATED - FY78 / $ 160000
TASK CODE=G603A-AG-17 **EPA=R803896-02 ** (GRANT) PRIOR FY77 / $ 793000

EPA OFFICER,: WE WILSON EPA/ESRL - RTP
INVESTIGATOR,: RB HUSAR WASHINGTON UNIV MECH ENG DEPT
NV GILLANI WASHINGTON UNIV MECH ENG DEPT
JD HUSAR WASHINGTON UNIV MECH ENG DEPT
PLAN ID.....: (AP-603A)(DU-A125) ATMOSPHERIC PROCESSES AND EFFECTS
MANDATE.....: 10-02 CLEAN AIR ACT
ORDIS CODES..: RECN-001874 SSIE-GMA 3871 1 EPA -R803896-02 TASK-G603A-AG-17
ORD -RG10R51-1078 LABN-G603A-AA-105 MAND-10-02
AP -603A DU -A125 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
COMMENT.....: CURRENT YR FUNDING INCLUDES: G603A-AA117 - $21000; 0036
G6258-EA093 - $25000' G603A-AA014 - $44000 0036
G603A-AA028 - $10000 0036

ABSTRACT.....: THIS TASK IS PART OF A LARGE PROGRAM TO DETERMINE THE OVERALL TRANSPORT, TRANSFORMATION AND REMOVAL (TRANSMISSION) PROCESSES OF ATMOSPHERIC SULFUR COMPOUNDS. THE MAIN EMPHASIS IS ON UNDERSTANDING SULFUR TRANSMISSION IN WELL-DEFINED PLUMES SUCH AS POWER PLANT AND URBAN PLUMES AS WELL AS ON THE REGIONAL (1000 KM) SCALE. AS PART OF THE STATE PROGRAM (SULFUR TRANSPORT AND TRANSFORMATION IN THE ENVIRONMENT), WASHINGTON UNIVERSITY WILL BE RESPONSIBLE FOR ADAPTING SEVERAL MELOY 285 SULFUR ANALYZERS FOR AIRCRAFT MEASUREMENT OF PARTICULATE SULFUR PRIOR TO THE TENNESSEE PLUME STUDY. THE GRANTEE WILL ALSO ASSIST IN THE OPERATIONS CONTROL CENTER DURING THE AUGUST-SEPTEMBER, 1978 INTENSIVE. HE WILL BE RESPONSIBLE FOR ANALYZING THE CONTINUOUS SO2, SF6, AND PARTICULATE SULFUR MEASUREMENTS IN TERMS OF SULFATE FORMATION RATES. SULFURIC ACID AND RELATED POLLUTANT DATA WILL BE ANALYZED IN TERMS OF LONG-RANGE TRANSPORT, TRANSFORMATION AND DEPOSITION OF SULFUR COMPOUNDS IN ST.LOUIS, MO AND STATE COLLEGE, PA. IN ADDITION TO MEASURING TOTAL PARTICULATE USING THERMAL ANALYSIS FLAME PHOTOMETRIC DETECTION THERE WILL ALSO BE A HEATED AND AN AMBIENT INTEGRATING NEPHELOMETER AND A FLORIDA STATE STREAKER. IN ADDITION, WASHINGTON UNIVERSITY WILL APPLY THE INFORMATION GAINED IN MISTT (MIDWEST INTERSTATE SULFUR TRANSFORMATION AND TRANSPORT) TO EXAMINE A VARIETY IN OR REMOVAL OF PRIMARY SULFATE, CHANGES IN STACK HEIGHT OR EXHAUST TEMPERATURE, AND VARIATIONS IN SO2 EMISSION RATES WITH TIME OF DATA OR SEASON TO PROMOTE DEPOSITION.

**PROJECT: 01660-SULFUR BUDGET IN LARGE PLUMES

STARTING/ COMPLETION DATE : 04/77 - 03/79 : FUNDING : ESTIMATED - FY78 / $ 100000
TASK CODE=G603A-AA-014 **EPA=R803896-02 ** (GRANT) PRIOR FY77 / $ 793000

EPA OFFICER,:	WE WILSON	EPA/ESRL - RTP	
INVESTIGATOR,:	RB HUSAR	WASHINGTON UNIV	MECH ENG DEPT
	HV GILLANI	WASHINGTON UNIV	MECH ENG DEPT
	JD HUSAR	WASHINGTON UNIV	MECH ENG DEPT
MILESTONES,..:	03/79 -STUDY COMPLETED		
PLAN ID.....:	(AP-603A)(OU-A125) ATMOSPHERIC PROCESSES AND EFFECTS		
MANDATE.....:	10-02 CLEAN AIR ACT		
ORDIS CODES,.:	RECN-001660	SSIE-GMA 5493	EPA -R803896-02 TASK-G603A-AA-014
	ORD -RG10851-1078	MAND-10-02	AP -603A
	DU -A125	LABT-ALW	
PROJ STATUS,.:	PROJECT-ACTIVE	DATA-ORIGINAL	CATEGORY-RESEARCH
COMMENT.....:	SPLIT FUNDS G603A-AA028 - $10000; G603A-AA-117 - $21000		0009
	G6258-EA-093 - $25000; G603A-AA-014 - $44000		0009

ABSTRACT.....: THIS TASK IS PART OF A LARGE PROGRAM TO DETERMINE THE OVERALL TRANSPORT, TRANSFORMATION AND REMOVAL (TRANSMISSION) PROCESSES OF ATMOSPHERIC SULFUR COMPOUNDS. THE MAIN EMPHASIS IS ON UNDERSTANDING SULFUR TRANSMISSION IN WELL DEFINED PLUMES SUCH AS POWER PLANT AND URBAN PLUMES AS WELL AS ON THE REGIONAL (1000 KM) SCALE, AS PART OF THE STATE PROGRAM (SULFUR TRANSPORT AND TRANSFORMATION IN THE ENVIRONMENT), WASHINGTON UNIVERSITY WILL BE RESPONSIBLE FOR ADAPTING SEVERAL MELOY 285 SULFUR ANALYZERS FOR AIRCRAFT MEASUREMENTS OF PARTICULATE SULFUR PRIOR TO THE TENNESSEE PLUME STUDY. THE GRANTEE WILL ALSO ASSIST IN THE OPERATIONS CONTROL CENTER DURING THE AUGUST-SEPTEMBER, 1978 INTENSIVE. HE WILL BE RESPONSIBLE FOR ANALYZING THE CONTINUOUS SO2, SF6, AND PARTICULATE SULFUR MEASUREMENTS IN TERMS OF SULFATE FORMATION RATES,SULFURIC ACID AND RELATED POLLUTANT DATA WILL BE ANALYZED IN TERMS OF LONG-RANGE TRANSPORT, TRANSFORMATION AND DEPOSITION OF SULFUR COMPOUNDS IN ST. LOUIS, MO AND STATE COLLEGE, PA. IN ADDITION TO MEASURING TOTAL PARTICULATE USING THERMAL ANALYSIS FLAME PHOTOMETRIC DETECTION THERE WILL ALSO BE A HEATED AND AN AMBIENT INTEGRATING NEPHELOMETER AND A FLORIDA STATE STREAKER. IN ADDITION, WASHINGTON UNIVERSITY WILL APPLY THE INFORMATION GAINED IN MISTT (MIDWEST INTERSTATE SULFUR TRANSFORMATION AND TRANSPORT) TO EXAMINE A VARIETY OF POSSIBLE TECHNIQUES FOR CONTROLLING SULFATE. THESE WILL INCLUDE REDUCTIONS IN OR REMOVAL OF PRIMARY SULFATE, CHANGES IN STACK HEIGHT OR EXHAUST TEMPERATURE, AND VARIATIONS IN SO2 EMISSION RATES WITH TIME OF DATA OR SEASON TO PROMOTE DEPOSITION.

**PROJECT: 00247-ACTIVATED SLUDGE TREATMENT OF SALMON PROCESSING WASTES

STARTING/ COMPLETION DATE : 08/75 - 03/78 : FUNDING : ESTIMATED - FY78 / $ 2000
TASK CODE=86108-100 **EPA=3803911 ** (GRANT) PRIOR FY77 / $ 85000

EPA OFFICER,: K DOSTAL EPA/IERL - CINC
INVESTIGATOR,: V MARTINO SKOKOMISH INDIAN TRIBE
PB LIAO SKOKOMISH INDIAN TRIBE
SS LIN SKOKOMISH INDIAN TRIBE
MILESTONES...: 03/78 -FINAL REPORT RECEIVED
PLAN ID.....: (AP-6108)(DU-8118) MATERIALS PROCESSING, INDUSTRIAL PT, SOURCES (WATER)
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
CURR. RESULTS: PILOT PLANT INSTALLED ALONGSIDE THE EXISTING SYSTEM 0006
ORDIS CODES..: RECN-000247 SSIE-ZZ 428 EPA -3803911 TASK-86108-100
ORD -RB10C30-1078 MAND-10-01 AP -6108
DU -8118 LAST-EMI

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVE OF THIS PROJECT IS TO DETERMINE THE EFFICIENCY OF BIOLOGICAL TREATMENT ON SALMON PROCESSING WASTEWATERS. THE PLANT UTILIZED IN THE STUDY WAS A LARGE INDIAN COMMERICAL FISHERY LOCATED IN THE STATE OF WASHINGTON. SALMON ARE HAND BUTCHERED AT THIS PLANT AND, AS A RESULT, A HIGHER LOADING OF BLOODS AND SOLIDS IS COMPOSED ON ITS WASTE TREATMENT FACILITY. DURING THE FIRST YEAR'S DATA COLLECTION, THE FISHERY WAS DRASTICALLY REDUCED DUE TO SMALLER RETURNS AND CHANGES IN REGULATIONS. ALTHOUGH BOD REMOVAL EFFICIENCIES WERE HIGH DURING THIS PERIOD, SUSPENDED SOLID (SS) REMOVAL EFFICIENCIES AND OTHER PARAMETERS WERE LOW. THE ORIGINAL DESIGN CRITERIA FOR HYDRAULIC DETENTION TIME IN THE AERATION CHAMBER AND THE OVERFLOW RATE IN THE CLARIFIER WERE ONE AND DAY AND 202 GPD/FT2, RESPECTIVELY. HOWEVER, DURING THE TESTING, HYDRAULIC DETENTION TIME IN THE AERATION CHAMBER WAS MUCH LONGER THAN DESIRED, RANGING FROM 3 TO 49 DAYS WITH AN AVERAGE OF 17 DAYS. ALSO, THE OVERFLOW RATE IN THE CLARIFIER WAS TOO LOW, RANGING FROM 4 TO 63 GPD/FT2 WITH AN AVERAGE OF 22 GPD/FT2. TO TEST THE EFFECT OF A SHORTER DETENTION TIME AND A HIGHER OVERFLOW RATE ON TREATMENT EFFICIENCIES, A PILOT PLANT WITH SMALLER CAPACITY AERATION TANK AND CLARIFIER SYSTEM WAS INSTALLED ALONGSIDE THE EXISTING SYSTEM. DURING TE PILOT PLANT OPERATION, HYDRAULIC DETENTION TIME WAS REDUCED TO A RANGE OF 0.3 TO 9.2 DAYS. SIMILARLY, THE OVERFLOW RATE WAS OPERATING AT A RANGE OF 115 TO 857 GPD/FT2. THE FOOD TO MICROORGANISM (F/M) RATION INCREASED TO A RANGE OF 0.037 TO 0.86. THE BOD REMOVAL EFFICIENCIES WERE HIGH PRIOR TO THE PILOT PLANT INSTALLATION AND REMAIN UNAFFECTED WITH THE REDUCED DETENTION TIMES. SUSPENDED SOLID REMOVAL EFFICIENCIES, AS EXPECTED, INCREASED FROM APPROXIMATELY 50% TO BETTER THAN 90% AFTER PILOT PLANT CONSTRUCTION. OTHER PARAMETERS (OIL AND GREASE, NUTRIENTS) ALSO FOLLOWED THIS PATTERN.

**PROJECT: 03324-EVALUATION OF HIGH-RATE INFILTRATION-PERCOLATION BEDS TO IMPROVE WATER QUALITY

STARTING/ COMPLETION DATE : 08/75 - 09/79 : FUNDING : ESTIMATED - FY78 / $ 22856
TASK CODE=L611C-52 **EPA=R803931-02 ** (GRANT) PRIOR FY77 / $ 127000

EPA OFFICER,: LE LEACH EPA/ERL - ADA
INVESTIGATOR,: DG SMITH BOULDER CITY GOVT
KD LINSTEDT UNIV OF COLORADO DEPT CIV & ENV ENG
ER BENNETT UNIV OF COLORADO DEPT CIV & ENV ENG
MILESTONES...: 08/76 -INTERIM REPORT RECEIVED
07/77 -SPECIFIC DESIGN DATA FOR BOULDER AND SIMILAR SYSTEMS
10/78 -FINAL REPORT - 3 YEARS DATA FOR TECHNICAL DESIGN BULLETINS
10/79 -SUPPLEMENTAL FINAL REPORT ON ADDITIONAL RESEARCH
PLAN ID.....: (AP-611C)(DU-B106) APPLICATION OF WASTEWATER TO LAND (SOIL TREATMENT SYSTEMS)
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-003324 SSIE-GMA 3857 1 EPA -R803931-02 TASK-L611C-52
ORD -RL10B30-1078 LABN-L611C-28 MAND-10-01
AP -611C DU -B106 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THIS PROJECT INVOLVES THE OPERATION AND MONITORING OF THREE INFILTRATION-PERCOLATION BASINS OF VARYING AREAS LESS THAN ONE ACRE. SECONDARY EFFLUENT FROM A MUNICIPAL WASTEWATER TREATMENT PLANT IS APPLIED AT LOADINGS OF 100 ACRE-FEET/ACRE/YEAR TO 200 ACRE-FEET/ACRE/YEAR. THE ANALYSIS OF WATER QUALITY AND THE VARIOUS OPERATIONAL MODES AVAILABLE AND THEIR EFFECT ON WATER QUALITY IS THE MAIN EMPHASIS OF THE PROJECT. ADDITIONAL STUDIES IN THE SUPPLEMENTAL FUNDING FOR FY '79 ARE SCHEDULED TO EVALUATE PRIMARY TREATED SEWAGE ON EXISTING INFILTRATION BASINS. THIS WASTEWATER WILL BE APPLIED AT RATES OF 50 ACRE-FEET/ACRE/YEAR AND 100 ACRE-FEET/ACRE/YEAR.

**PROJECT: 03586-ASSESSMENT OF THE EFFECTS OF BOTTOM DISTURBANCE ON THE ENVIRONMENT OF A CLEAR SUBARCTIC STREAM

STARTING/ COMPLETION DATE : 07/75 - 06/79 : FUNDING : ESTIMATED - FY78 / $ 27844
TASK CODE=M625A-004 **EPA=R803945-03 ** (GRANT) PRIOR FY77 / $ 130585

EPA OFFICER,: EW SCHALLOCK EPA/ERL - CORVALLIS
INVESTIGATOR,: JE MORROW UNIV OF ALASKA FAIRBANKS CAMPUS
RL SMITH UNIV OF ALASKA FAIRBANKS CAMPUS
MILESTONES...: 06/79 -FINAL REPORT
PLAN ID.....: (AP-625A)(DU-N140) EFFECTS OF ENERGY-RELATED POLL. ON ORGANISMS & ECOSYSTEMS
MANDATE.....: 10-99 GY REORGANIZATION ACT. 0043
ORDIS CODES..: RECN-003586 SSIE-GMA 2447 3 EPA -R803945-03 TASK-M625A-004
ORD -RM10B30-1078 MAND-10-99 AP -625A
DU -N140 LABT-MEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVE: THIS PROJECT HAS BEEN MODIFIED TO INCLUDE A STUDY TO DETERMINE THE EFFECTS OF WATER-SOLUBLE FRACTION OF CRUDE OIL ON THE CONDITION AND GUT MORPHOLOGY OF JUVENILE CHUM-SALMON. APPROACH: THIS PROJECT WILL TEST THE EFFECT OF SUBLETHAL EXPOSURE TO THE WSF OF PRUDHOE BAY CRUDE OIL ON GROWTH, CONDITION AND TOTAL BODY FAT IN JUVENILE CHUM SALMON. IN ADDITION, THE MORPHOLOGY AND STRUCTURAL INTEGRITY OF THE GUT WILL BE EXAMINED FOR POTENTIAL ABNORMALITIES ASSOCIATED WITH THE SWALLOWING OF OIL-CONTAMINATED SEAWATER. SCANNING AND TRANSMISSION ELECTRON MICROSCOPY WILL BE USED FOR THE GUT COMPARISONS.

**PROJECT: 03768-TOXIC EFFECTS ON THE AQUATIC BIOTA FROM COAL AND OIL SHALE DEVELOPMENT

STARTING/ COMPLETION DATE : 07/75 - 12/78 : FUNDING : ESTIMATED - FY78 / $ 108000
TASK CODE=N644A-080 **EPA=R803950-03 ** (GRANT) PRIOR FY77 / $ 1150000

EPA OFFICER.: DI MOUNT EPA/ERL - DULUTH
INVESTIGATOR.: RV THURSTON COLORADO STATE UNIV NAT RESOURCE ECOLOGY LAB
MILESTONES...: 08/77 -5 REPORTS ON COAL STRIPMINING EFFECTS ON CHEM AND BIOTA
09/77 -REPORTS ON BIOLOGICAL AND CHEMICAL EFFECTS OF COAL COMBUSTION
09/77 -REPORTS ON BASELINE STUDIES FOR OIL SHALE EXTRACTION
01/78 -SYNTHESIS REPORT ON AQUATIC EFFECTS OF COAL STRIPPING
01/78 -SYNTHESIS REPORT ON AQUATIC EFFECTS OF COAL COMBUSTION
01/78 -PRELIMINARY REPORTS ON TOXICITY AND ANALYSIS OF COAL GASSIFICATIO
12/78 -REPORTS: AQUATIC EFFECTS COAL MINING; COMBUST, OIL SHALE EXTRACT

PLAN ID.....: (AP-644A)(DU-) PLAN 644A
MANDATE.....: 30-99 OGY CHEMISTRY 0047
ORDIS CODES..: RECN-003768 SSIE-GMA 3526 2 EPA -R803950-03 TASK-N644A-080
ORD -RN10830-3078 LABN-N625A-080 MAND-30-99
AP -644A LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OVERALL OBJECTIVE OF THIS RESEARCH PROJECT IS TO PROVIDE PREDICTIVE INFORMATION WITH REGARD TO POTENTIAL TOXICANTS TO THE AQUATIC ENVIRONMENT RESULTING FROM COAL AND OIL SHALE EXTRACTION AND CONVERSION. THE SPECIFIC OBJECTIVES ARE TO IDENTIFY AND QUANTIFY THOSE CHEMICAL PRODUCTS OF COAL AND OIL SHALE EXTRACTION AND CONVERSION WHICH MAY REACH SURFACE WATERS, AND TO DETERMINE BY BOTH FIELD STUDIES AND LABORATORY BIOASSAYS THE DEGREE TO WHICH THOSE CHEMICALS MAY BE ACUTELY OR CHRONICALLY TOXIC TO FISHES AND AQUATIC INVERTEBRATES, OR MAY BECOME INVOLVED AS PART OF THE FOOD CHAIN. FOUR CATEGORIES OF ENERGY DEVELOPMENT ARE BEING CONSIDERED: COAL MINING, COAL COMBUSTION, COAL GASIFICATION AND LIQUEFACTION, AND OIL SHALE EXTRACTION AND PROCESSING. POTENTIAL TOXICANTS TO THE AQUATIC ENVIRONMENT ARE BEING IDENTIFIED BY A COMBINATION OF FIELD, LABORATORY, AND LITERATURE STUDIES, AS WELL AS BY INFORMATION GAINED FROM COOPERATIVE INPUT FROM OTHER ENERGY-RELATED RESEARCH PROGRAMS. CONCURRENT CHEMICAL AND BIOLOGICAL LABORATORY AND FIELD BIOASSAYS AS WELL AS AQUATIC DISTRIBUTION STUDIES DICTATE WHAT ADDITIONAL OR ALTERNATE EMPHASIS IS REQUIRED IN THE LABORATORY AND FIELD CHEMICAL STUD

**PROJECT: 03759-ORGANIC LEACHING AND PARTICULATE DISPERSION FROM COAL

STARTING/ COMPLETION DATE : 07/75 - 08/78 : FUNDING : ESTIMATED - FY78 / $ 11000
TASK CODE=N625A-081 **EPA=R803952-03 ** (GRANT) PRIOR FY77 / $ 395800

EPA OFFICER.: DW KUCHL EPA/ERL - DULUTH
INVESTIGATOR.: M SYDOR UNIV OF MINNESOTA
R CAPLE UNIV OF MINNESOTA
RM CARLSON UNIV OF MINNESOTA
MILESTONES...: 08/78 -FINAL REPORT
PLAN ID.....: (AP-625A)(DU-N140) EFFECTS OF ENERGY-RELATED POLL. ON ORGANISMS & ECOSYSTEMS
MANDATE.....: 30-99 OGY-CHEMISTRY 0047
ORDIS CODES..: RECN-003759 SSIE-ZZ 251 EPA -R803952-03 TASK-N625A-081
ORD -RN10C30-3078 MAND-30-99 AP -625A
DU -N140 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: A MAJOR THRUST OF THIS PROJECT WILL REMAIN THE MONITORING OF POLYNUCLEAR AROMATIC HYDROCARBONS (PAH'S) AT THE MICROPOLLUTANT LEVEL (PPM OR LESS). THE HIGH PRESSURE LIQUID CHROMATOGRAPHY-GAS CHROMATOGRAPHY (HPLC-GC) IDENTIFICATION METHODOLOGY DEVELOPED IN THESE LABORATORIES FOR THE ANALYSIS OF TRACE PAH'S IN COAL LEACHATES, AND IN GENERAL WATER SAMPLES, WILL BE EXTENDED AND APPLIED TO SUCH PROBLEMS AS THE BIOCONCENTRATION OF PAH'S IN FISH TISSUE, AIDING IN THE ANALYSIS OF "SECOND-ORDER" PAH'S (I.E., METABOLITES, PHOTOCHEMICAL OXIDATION PRODUCTS, AQUEOUS DISINFECTION PRODUCTS), AND IN THE PAH ANALYSIS OF COAL STEAM DISTILLATES. THE ULTIMATE GOAL OF THE PROPOSED INVESTIGATION IS TO DETERMINE THE LONG RANGE INFLUENCE OF A COAL LOADING FACILITY ON A GREAT LAKE HARBOR IN TERMS OF TRANSPORT OF COAL PARTICULATE MATTER, USING PHYSICAL AND CHEMICAL MEASUREMENTS AND APPLICATION OF NUMERICAL MODELING FOR WATER QUALITY TO THE DULUTH-SUPERIOR HARBOR.

A-936

**PROJECT: 000924-CONTROLLED LANDFILL STABILIZATION BY LEACHATE RECYCLE

STARTING/ COMPLETION DATE : 07/75 - 02/79 : FUNDING : ESTIMATED - FY78 / $ 25000
TASK CODE=C618A-7032 **EPA=R803953-02 ** (GRANT) PRIOR FY77 / $ 52024

EPA OFFICER,: DR BRUNNER EPA/HERL - CINC
INVESTIGATOR,: F POHLAND GEORGIA INST OF TECH SCH OF CIVIL ENG
R WISCOVITCH GEORGIA INST OF TECH SCH OF CIVIL ENG
MILESTONES...: 02/78 -INTERIM REPORT ON DECOMPOSITION RATES
02/79 -REPORT: ECON. TECH. FEASIBILITY OF THE LEACHATE RECIRC. CONCEPT
PLAN ID.....: (AP=618A)(DU=D110) SOLID & HAZARDOUS WASTE MANAGEMENT 0020
FINAL OUTPUT,: FEASIBILITY OF LEACHEATE RECYCLE CONCEPT.
MANDATE.....: 10-05 RESOURCE CONSERVATION AND RECOVERY ACT
20-14 DAA FOR SOLID WASTE
ORDIS CODES..: RECN=000924 SSIE-GMA 3929 1 EPA =R803953-02 TASK=C618A-7032
ORD =RC10830-5078 MAND=10-05 MAND=20-14
AP =618A DU =D110 LAST=ALW

PROJ STATUS..: PROJECT=ACTIVE DATA=ORIGINAL CATEGORY=RESEARCH
ABSTRACT.....: OBJECTIVES: THE OBJECTIVES OF THE PROPOSED WORK ARE TO CONFIRM LABORATORY STUDIES OF THE LEACHATE RECYCLE CONCEPT WITH LARGER, PROTOTYPE TEST CELLS AND TO ELUCIDATE INFORMATION ON MASS FLUX OF GAS AND LEACHATE COMPONENTS, WITH PARTICULAR ATTENTION TO THE EFFECT OF EVAPOTRANSPIRATION ON THE RATES AND QUANTITIES OF LEACHATE. APPROACH: TWO DOUBLY-LINED TEST CELLS, 12 X 12 X 10 FEET HIGH, ONE COMPLETELY CLOSED FOR QUANTITATIVE GAS MEASUREMENT AND THE OTHER COVERED WITH SOIL AS IS THE USUAL PRACTICE AT LANDFILLS, WILL RECEIVE IDENTICAL VOLUMES OF WATER AND WEIGHT OF SHREDDED SOLID WASTE. THE MOISTURE CONTENT WILL BE BROUGHT TO 60 PERCENT (WET WEIGHT) BY ADDING DIGESTED SEWAGE SLUDGE DURING CONSTRUCTION. GAS WILL BE MONITORED FOR CO2, CH4, AND OTHER CONSTITUENTS AND TOTAL VOLUME; LEACHATE WILL BE MONITORED FOR BOD, COD, TOC, TOTAL AND INDIVIDUAL VOLATILE ACIDS, ALKALINITY, ACIDITY, PH, NITROGEN AND PHORUS, CHLORIDES, SULFIDES OR SULFATES, AND PERTINENT HEAVY AND ALKALINE EARTH METALS. THE SOLID WASTE OF EACH CELL WILL BE SAMPLED AT THE START AND COMPLETION OF THE TESTS FOR VISUAL AND QUANTITATIVE CHARACTERIZATION. OUTPUT: MASS FLUX WILL BE DETERMINED FOR THE CONTAMINANT MONITORED AND ANALYSES MADE TO INTERPRET AND CONTROL THE STABILIZATION PROCESS. MODIFICATIONS TO THE BASIC SYSTEMS OPERATION WILL BE MADE AS REQUIRED. THE ENERGY GENERATION POTENTIAL, METHANE PRODUCTION, WILL BE ASSESSED. RECOMMENDED DESIGN AND CONTROL PROCEDURES FOR LEACHATE CONTAINMENT AND RECYCLE WILL BE DEVELOPED. A RIGOROUS ASSESSMENT OF THE COST/BENEFITS OF THE RECYCLE CONCEPT, IN CONTEXT OF DAILY OPERATION/IMPLEMENTATION, INCLUDING ECONOMIC AND TECHNICAL FEASIBILITY, AND THE EXTENT OF POTENTIAL APPLICATION WILL BE PREPARED.

**PROJECT: 03760-THE IMPACT OF COAL-FIRED POWER PLANTS ON THE ENVIRONMENT

STARTING/ COMPLETION DATE : 07/75 - 12/78 : FUNDING : ESTIMATED - FY78 / $ 45500
TASK CODE=N625A-082 **EPA=R803971-03 ** (GRANT) PRIOR FY77 / $ 2108200

EPA OFFICER.: GE GLASS EPA/ERL - DULUTH
INVESTIGATOR.: OL LOUCKS UNIV OF WISCONSIN CTR FOR BIOTIC SYSS/BOTANY DEPT
MILESTONES...: 07/78 -COMPLETE DRAFT SITING CRITERIA DOCUMENT
07/78 -COMPLETE MAJOR REPORTS ON ALL IMPACTS ON UNIT 1
12/78-COMPLETION OF REPORT
PLAN ID.....: (AP-625A)(DU-N140) EFFECTS OF ENERGY-RELATED POLL. ON ORGANISMS & ECOSYSTEMS
MANDATE.....: 30-99 OGY-CHEMISTRY 0047
CURR. RESULTS: PORTION OF STUDY DEVELOPING CRITERIA FOR SITING OF 0047
GENERATING FACILITES 0047
ORDIS CODES..: RECN-003760 SSIE-ZZ 252 EPA -R803971-03 TASK-N625A-082
ORD -RN10C30-3078 MAND-30-99 AP -625A
DU -N140 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THIS PROPOSAL REQUESTS SUPPORT TO CONTINUE INVESTIGATION OF ENVIRONMENTAL CHANGES DUE TO CONSTRUCTION AND OPERATION OF A COAL-FIRED POWER GENERATING STATION, TWO UNITS 527 MEGAWATTS EACH. ORIGINALLY RESEARCH WAS COMMENCED IN 1971 UNDER A GRANT FROM THREE WISCONSIN POWER COMPANIES. THE THIRD YEAR OF THE CURRENT PHASE OF THE PROJECT WILL BE COMPLETED IN JULY 1978. THE SITE IS ON THE FLOODPLAIN OF THE WISCONSIN RIVER NEAR PORTAGE, WISCONSIN. PRIMARY ATTENTION IS GIVEN TO THE IMPACT ON THE AQUATIC ENVIRONMENT. THE APPROACH IS INTER-DISCIPLINARY, WITH DISCRETE SECTIONS FOCUSED ON: AQUATIC INVERTEBRATES, FISH, HYDROGEOLOGY, WATER USE ANALYSIS, WETLANDS ECOLOGY, REMOTE SENSING, AQUATIC CHEMISTRY, HAZARDOUS CHEMICALS IN FISH, ASSESSMENT OF A COOLING SYSTEM, METEOROLOGY, AIR POLLUTION MODELLING, PLANT DAMAGE, TRACE ELEMENTS, ORGANIC CONTAMINANTS, PLUME CHEMISTRY, VISUAL CHANGES, MASS FLOW AND BALANCE OF WATER, AIR, AND CHEMICALS, DATA AVAILABLE THROUGH THE COLUMBIA DATA BANK, IES, MADISON. A PORTION OF THE STUDY IS DEVELOPING, IN CONCERT WITH THE WISCONSIN PUBLIC SERVICE COMMISSION, THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES, AND THREE WISCONSIN PUBLIC UTILITIES, CRITERIA FOR THE SITING OF GENERATING FACILITIES.

**PROJECT: 01896-MEASUREMENT OF TROPOSPHERIC AND STRATOSPHERIC TRACE GASES BY GAS CHROMATOGRAPHY
STARTING/ COMPLETION DATE : 04/77 - 00/80 : FUNDING : ESTIMATED - FY78 / $ 75000
TASK CODE=G603A-AI-04 **EPA=R804033-03 ** (GRANT) PRIOR FY77 / $ 28000

EPA OFFICER,: P HANST EPA/ESRL - RTP
INVESTIGATOR,: DR CRONN WASHINGTON STATE UNIV SCH OF ENG
RA RASMUSSEN WASHINGTON STATE UNIV SCH OF ENG
E ROBINSON WASHINGTON STATE UNIV SCH OF ENG
MILESTONES...: 12/80 -FINAL REPORT
PLAN ID.....: (AP-603A)(DU-A125) ATMOSPHERIC PROCESSES AND EFFECTS
MANDATE.....: 10-02 CLEAN AIR ACT
ORDIS CODES..: RECN-001896 SSIE-GMA 2753 2 EPA -R804033-03 TASK-G603A-AI-04
ORD -RG10830-1078 LABN-G603A-AF-05 MAND-10-02
AP -603A DU -A125 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVE IS TO MAKE MEASUREMENTS OF THE VERTICAL CONCENTRATION DISTRIBUTIONS OF SELECTED TRACE GAS SPECIES IN THE TROPOSPHERE AND LOWER STRATOSPHERE. EMPHASIS WILL BE PLACED ON DETERMINATIONS OF HALOCARBONS AND NON-METHANE HYDROCARBONS. DETERMINATION OF THE CONCENTRATIONS OF THE HALOCARBON SPECIES WILL BE ACCOMPLISHED BY THE METHODS OF ELECTRON CAPTURE - GAS CHROMATOGRAPHY AND GAS CHROMATOGRAPHY-MASS SPECTROMETRY -WHILE GAS CHROMATOGRAPHY WITH FLAME IONIZATION DETECTION WILL BE EMPLOYED FOR THE DETERMINATION OF THE HYDROCARBONS. SAMPLES WILL BE COLLECTED BY AIRCRAFT FLIGHTS IN THE UNITED STATES.

**PROJECT: 00968-PREPARATION, USE AND COST OF D-RDF AS A SUPPLEMENTARY FUEL IN STOKER FIRED BOILERS
STARTING/ COMPLETION DATE : 09/75 - 08/78 : FUNDING : ESTIMATED - FY78 / $ 36000
TASK CODE=C624 -7211 **EPA=R804150-01 ** (GRANT) PRIOR FY77 / $ 560000

EPA OFFICER,: CC WILES EPA/MERL - CINC
INVESTIGATOR,: H ALTER NATL CTR FOR RES RECOVERY
J CAMPBELL NATL CTR FOR RES RECOVERY
MILESTONES...: 09/76 -PRODUCTION OF D-RDF FOR COMBUSTION STUDIES
06/78 -ADDITIONAL PRODUCTION OF D-RDF
PLAN ID.....: (AP-624)(DU-L110) CONSERVATION AND UTILIZATION TECHNOLOGY ASSESSMENT
MANDATE.....: 20-14 DAA FOR SOLID WASTE
ORDIS CODES..: RECN-000968 SSIE-GMA 2833 2 EPA -R804150-01 TASK-C624 -7211
ORD -RC10810-2078 LABN-C624B-125 MAND-20-14
AP -624 DU -L110 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THIS RESEARCH GRANT INVOLVES THE STUDY OF THE TECHNICAL AND ECONOMIC ASPECTS OF PREPARING AND USING DENSIFIED FORMS OF MUNICIPAL SOLID WASTE AS A SUPPLEMENTARY FUEL IN INDUSTRIAL AND INSTITUTIONAL STOKER COAL FIRED BOILERS. INVESTIGATIONS ARE BEING CONDUCTED TO ESTABLISH METHODOLOGY FOR PREPARING DENSIFIED REFUSE DERIVED FUEL (D-RDF). PROCESS AND PRODUCT CHARACTERIZATIONS ARE BEING DEVELOPED TO ENABLE ESTABLISHMENT OF SPECIFICATIONS FOR D-RDF. DENSIFICATION FORMS WILL INCLUDE PELLETS, BRIQUETTES, AND CUBETTES. INDEPENDENT BOILER BURN TESTS AND OPERATIONS ARE BEING CONDUCTED IN CONJUNCTION WITH THIS RESEARCH TO FULLY CHARACTERIZE THE CONCEPT.

**PROJECT: 03402-RELATIONSHIP BETWEEN MINERALOGY AND WATER QUALITY IN WESTERN ENERGY RECOVERY

STARTING/ COMPLETION DATE : 12/75 - 12/79 : FUNDING : ESTIMATED - FY78 / $ 263658
TASK CODE=L6258-03 **EPA=R804162-01 ** (GRANT) PRIOR FY77 / $ 905426

EPA OFFICER,: BD NEWPORT EPA/ERL - ADA
INVESTIGATOR,: DL KLOEPPER COLORADO SCHOOL OF MINES RES INST
JS FRYBERGER COLORADO SCHOOL OF MINES RES INST
MILESTONES,..: 12/77 -FINAL REPORT--SURFACE MINING COAL
12/78 -FINAL REPORT--COAL GASIFICATION
12/79 -FINAL REPORT--OIL SHALE RETORTING
PLAN ID.....: (AP-6258)(DU-N140) TRANSPORT AND FATE OF ENERGY-RELATED POLL. IN ECOSYSTEMS
MANDATE.....: 20-99 SCHOOL OF MINES RES. INST., GOLDEN CO 0038
30-99 ROLOGY 0038
ORDIS CODES..: RECN-003402 SSIE-GMA 4590 1 EPA -R804162-01 TASK-L6258-03
ORD -RL10B30-5078 MAND-20-99 MAND-30-99
AP -6258 DU -N140 LAST-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE COLORADO SCHOOL OF MINES RESEARCH INSTITUTE, UNDER GRANT FROM THE ENVIRONMENTAL PROTECTION AGENCY, DEVELOPED FIELD AND LABORATORY TECHNIQUES WHICH ALLOW CORRELATIONS TO BE MADE BETWEEN GROUND-WATER CHEMISTRY AND STRATA MINERALOGY. APPLICATIONS OF THESE TECHNIQUES HAVE BEEN DEMONSTRATED IN WESTERN COAL STRIP MINING AND ARE BEING INVESTIGATED IN IN-SITU COAL GASIFICATION. THE PURPOSE OF THE PRESENT STUDY WILL BE TO DEMONSTRATE AND EXTEND THE USE OF EXISTING TECHNIQUES TO IN SITU RECOVERY OF HYDROCARBON PRODUCTS FROM OIL SHALE. THIS PROJECT WILL INCLUDE AN INVESTIGATION OF THE HYDROLOGIC AND MINERALOGIC REGIMES, DATA TO BE GATHERED INCLUDE THE NUMBER AND TYPE OF AQUIFERS, FLOW CHARACTERISTICS, AND CHEMICAL COMPOSITION. CORES OF THE OIL SHALE SECTION WILL BE ANALYZED IN THE LABORATORY BY X-RAY FLUORESCENCE, X-RAY DIFFRACTION, MICROSCOPY, AND STANDARD CHEMICAL METHODS. THESE DATA WILL PROVIDE BASELINE WATER AND MINERALOGY DATA, PRIOR TO THE BURN. ADDITIONAL WATER AND CORE SAMPLES WILL BE OBTAINED AFTER THE IN SITU BURN IS COMPLETED.

**PROJECT: 01087-A LONGITUDINAL EVALUATION OF LEAD BODY BURDEN IN GROWING CHILDREN

STARTING/ COMPLETION DATE : 05/76 - 07/80 : FUNDING : ESTIMATED - FY78 / $ 256361
TASK CODE=D614 -017 **EPA=R804168-03 ** (GRANT) PRIOR FY77 / $ 429000

EPA OFFICER.: GF CRAUN EPA/HERL - CINC
INVESTIGATOR.: AH LUBIN CHILDRENS HOSPITAL
PLAN ID.....: (AP=614)(DU=C110) PUBLIC SECTOR ACTIVITIES- WATER SUPPLY
MANDATE.....: 10-13 SOLID WASTE DISPOSAL ACT
CURR. RESULTS: INITIAL DATA ON APPROX 150 PREGNANT WOMEN AND 10 OF THEIR OFFSPRING INDICATE DIRECT CORRELATION BETWEEN LEAD IN BLOOD IN MOTHER, CORD BLOOD LEAD DETERM, AND NEWBORN INFANT LEAD VALUES. 0003 0003 0003 0003
ORDIS CODES..: RECN=001087 SSIE=GHA 5393 EPA =R804168-03 TASK=D614 -017
ORD =RD10B30-1078 MAND=10-13 AP =614
DU =C110 LABT=HEE

PROJ STATUS..: PROJECT=ACTIVE DATA=ORIGINAL CATEGORY=RESEARCH
ABSTRACT.....: ASSESSMENT AND CORRELATIONAL ANALYSES OF BIOCHEMICAL, NUTRITIONAL, AND GROWTH PARAMETERS WITH THE AMOUNT OF EXPOSURE OF COMMONLY ACCEPTED SOURCES OF ENVIRONMENTAL LEAD (AIR, DUST, AND WATER) ARE BEING PERFORMED SEQUENTIALLY THROUGHOUT THE MOTHER'S PREGNANCY AND THE SUBSEQUENT OFFSPRINGS FIRST TWO YEARS OF LIFE TO DETERMINE THE RELATIVE EFFECT OF MULTIPLE SOURCES OF LEAD EXPOSURE ON THE MOTHER AND CHILD AND THE LONGITUDINAL CHANGES IN BLOOD LEAD CONCENTRATIONS AND BODY BURDEN OF LEAD IN THE GROWING INFANT AND CHILD. APPROXIMATELY 200 TO 250 WOMEN IN EACH OF THREE CITIES, COLUMBUS, OHIO; BOSTON, MASSACHUSETTS; AND NEW BEDFORD, MASSACHUSETTS; ARE BEING ENROLLED EARLY IN THE SECOND TRIMESTER OF THEIR PREGANCIES. DIFFERENCES IN SOCIOLOGICAL AND ENVIRONMENTAL ASPECTS WHICH MAY CONTRIBUTE TO UNDUE BODY LEAD BURDEN FROM CITY TO CITY SHOULD BE ELUCIDATED. INITIAL DATA ON APPROXIMATELY 150 PREGNANT WOMEN AND ON APPROXIMATELY 10 OF THEIR OFFSPRING INDICATE A VERY DIRECT CORRELATION BETWEEN LEAD IN BLOOD IN THE MOTHER, CORD BLOOD LEAD DETERMINATIONS, AND NEWBORN INFANT LEAD VALUES. THERE ALSO APPEARS TO BE A SIGNIFICANT DIFFERENCE IN THE VALUES DETERMINED IN THE POPULATIONS OF THE DIFFERENT CITIES. OBSERVATIONS ON ENVIRONMENTAL ASPECTS SHOW A REMARKABLY CONSTANT FIGURE FOR LEAD IN AIR IN ALL CITIES, AND LEAD IN DUST RESULTS CONFIRM DUST TO BE A SIGNIFICANT SOURCE OF LEAD INTAKE FOR C

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**PROJECT: 02233-EVALUATE AN IMPROVED MANUAL PARTICLE SIZE FRACTIONATOR

STARTING/ COMPLETION DATE : 09/75 - 08/79 : FUNDING : ESTIMATED - FY78 / $ 30000
TASK CODE=G7128-BE-36 **EPA=R804190-03 ** (GRANT) PRIOR FY77 / $ 105600

EPA OFFICER,: CH LEWIS EPA/ESRL - RTP
INVESTIGATOR,: AR MCFARLAND TEXAS A & M UNIV SCH OF ENG/CIV ENG DEPT
MILESTONES...: 09/75 -GRANT AWARD
04/77 -PUBLISH JOURNAL ARTICLE ON WIND TUNNEL TESTS OF INLETS
06/78 -PUBLISH JOURNAL ARTICLE ON FRACTIONATOR PERFORMANCE
08/79 -PRESENT, MATH, BASES FOR FRACTIONATOR AND INLET HEAD DESIGNS
08/79 -RESULTS OF EXPERIMENTAL CHARACTERIZATIONS
PLAN ID.....: (AP-7128)(DU-A130) CHAR, AND MEASUREMENT METHODS DEVELOPMENT (AIR)
FINAL OUTPUT,: DESIGNS FOR AEROSOL INLET HEAD AND PARTICLE 0046
FRACTIONATOR; EXPERIMENTAL VERIFICATIONS OF DESIGNS 0046
MATHEMATICAL MODELS OF HEAD AND FRACTIONATOR OPERAT 0046
MANDATE.....: 10-02 CLEAN AIR ACT
CURR. RESULTS: FRACTIONATOR DESIGNED,CHARACTERIZED AND MATHEMATICA 0046
DESCRIBED (L JOURNAL ARTICLE); INLET HEAD DESIGNED 0046
PARTIALLY CHARACTERIZED (L JOURNAL ARTICLE). 0046
ORDIS CODES..: RECN-002233 SSIE-GMA 3766 1 EPA -R804190-03 TASK-G7128-BE-36
ORD -RG10830-1078 LABN-G7128-BB-36 MAND-10-02
AP -7128 DU -A130 LABT-ALM

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVE/APPROACH: TO EVALUATE AND IMPROVE THE PERFORMANCE OF THE DICHOTOMOUS VIRTUAL IMPACTOR AEROSOL SAMPLER, BY MEANS OF MATHEMATICAL MODELING AND EXPERIMENTAL TESTS. FINAL OUTPUTS: DESIGNS FOR AEROSOL INLET HEAD AND PARTICLE FRACTIONATOR; EXPERIMENTAL VERIFICATIONS OF DESIGNS; MATHEMATICAL MODELS OF HEAD AND FRACTIONATOR OPERATION. RESULTS TO DATE: FRACTIONATOR DESIGNED, CHARACTERIZED AND MATHEMATICALLY DESCRIBED (1 JOURNAL ARTICLE); INLET HEAD DESIGNED AND PARTIALLY CHARACTERIZED (1 JOURNAL ARTICLE).

**PROJECT: 01143-EVALUATION OF TENTATIVE STANDARD METHODS FOR ENTERIC VIRUS CONCENTRATION
AND DETECTION IN DRINKING WATER AND OTHER FINISHED WATERS
STARTING/ COMPLETION DATE : 12/75 - 12/78 : FUNDING : ESTIMATED - FY78 / $ 79400
TASK CODE=D6148-033 **EPA=R804218-03 ** (GRANT) PRIOR FY77 / $ 154700

EPA OFFICER,: W JAKUBOWSKI EPA/HERL - CINC
INVESTIGATOR,: MD SOBSEY UNIV OF NORTH CAROLINA SCH OF PUBLIC HLTH
JD JOHNSON UNIV OF NORTH CAROLINA SCH OF PUBLIC HLTH
MILESTONES...: 12/76 -ANNUAL REPORT
12/77 -ANNUAL REPORT
12/78 -FINAL REPORT
PLAN ID.....: (AP-6148)(DU-C110) WATER SUPPLY - HEALTH EFFECTS RESEARCH
MANDATE.....: 10-13 SOLID WASTE DISPOSAL ACT
ORDIS CODES..: RECN-001143 SSIE-GMA 4342 1 EPA -R804218-03 TASK-D6148-033
ORD -RD10830-1078 LABN-D6148-020 MAND-10-13
AP -6148 DU -C110 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVE OF THIS STUDY IS TO CRITICALLY EVALUATE THE NEWLY PROPOSED TENTATIVE STANDARD METHODS PROCEDURES FOR CONCENTRATING AND DETECTING ENTERIC VIRUSES IN LARGE VOLUMES OF DRINKING WATER AND OTHER FINISHED WATERS. THE EVALUATION OF THE PROCEDURES WILL BE DONE WITH A TOTAL OF NINE DIFFERENT VIRUSES REPRESENTING THE FOUR MAJOR ENTERIC VIRUS GROUPS. THESE VIRUSES ARE: POLIOVIRUS TYPE 1, COXSACKIEVIRUSES A9 AND B3, ECHOVIRUS 7, BOVINE ENTEROVIRUS TYPE 1, REOVIRUS TYPE 3, ADENOVIRUS TYPE 1, SIMIAN VIRUS 11 AND MINUTE VIRUS OF MICE. IN A LATER PHASE OF THE EVALUATION, MIXTURES OF NATURALLY OCCURRING ENTERIC VIRUSES OBTAINED FROM WASTEWATER WILL ALSO BE UTILIZED. THE FOUR DIFFERENT TYPES OF MICROPOROUS FILTERS THAT ARE CURRENTLY RECOMMENDED AS VIRUS ADSORBENTS WILL BE SIMULTANEOUSLY EVALUATED USING 100 GALLON VOLUMES OF TAPWATER EXPERIMENTALLY CONTAMINATED WITH LOW LEVELS OF THE SIX TEST VIRUSES. ALL ASPECTS OF THE TENTATIVE STANDARD METHODS PROCEDURE WILL BE INVESTIGATED, INCLUDING PRIMARY VIRUS ADSORPTION, PRIMARY VIRUS ELUTION AND RECONCENTRATION. IF THE PRESENTLY RECOMMENDED TENTATIVE STANDARD METHODS PROCEDURES FOR CONCENTRATING AND DETECTING ENTERIC VIRUSES IN FINISHED WATERS ARE FOUND TO BE INCAPABLE OF EFFICIENTLY RECOVERING CERTAIN ENTERIC VIRUSES, THEN MODIFICATIONS OF THE METHODOLOGY WILL BE INVESTIGATED

**PROJECT: 01156-EFFECTS OF SELECTED ORGANIC WATER CONTAMINANTS ON MALE REPRODUCTIVE FUNCTION

STARTING/ COMPLETION DATE : 01/76 - 07/79 : FUNDING : ESTIMATED - FY78 / $ 121984
TASK CODE=D6148-043 **EPA=R804290-02 ** (GRANT) PRIOR FY77 / $ 192000

EPA OFFICER.: KI CAMPBELL EPA/HERL - CINC
INVESTIGATOR.: JF BORZELLECA VIRGINIA COMMONWEALTH UNIV MED COLL OF VA
HL SKALSKY VIRGINIA COMMONWEALTH UNIV MED COLL OF VA
MILESTONES...: 01/76 -BEGIN WORK
07/78 -COMPLETE WORK AN ORIGINAL CHEMICALS; BEGIN ON HALOMETHANES
07/79 -COMPLETE EXTENSION WORK; FINAL REPORT
PLAN ID.....: (AP-6148)(DU-C110) WATER SUPPLY - HEALTH EFFECTS RESEARCH
MANDATE.....: 10-13 SOLID WASTE DISPOSAL ACT
ORDIS CODES..: RECN-001156 SSIE-GMA 4431 1 EPA -R804290-02 TASK-D6148-043
ORD -RD10B30-1078 LABN-D6148-0158 MAND-10-13
AP -6148 DU -C110 LABT-HEF

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVE OF THIS GRANT IS TO DETERMINE THE ABILITY OF CERTAIN ORGANIC COMPOUNDS TO EFFECT THE MALE REPRODUCTIVE TRACT AND ALTER REPRODUCTIVE FUNCTION OR GENETIC TRANSMISSION. POTENTIAL ANTIFERTILITY EFFECTS AND THEIR REVERSIBILITY WILL BE DETERMINED FOR 2,4-DINITROTOLUENE (DNT), 2,37,8-TETRACHLORODIBENZO-P-DIOXIN (TCDD), AND HEXACHLOROBENZENE BY 12-WEEK FEEDING STUDIES WITH SUBSEQUENT MATING AND BY DAILY ORAL INTUBATION WITH SERIAL MATING. MUTAGENIC POTENTIAL WILL BE ASSESSED BY THE RAT DOMINANT LETHAL ASSAY (DLA). TO DETERMINE MODE OF ACTION, INTEGRITY OF THE PITUITARY-GONODAL ENDOCRINE SYSTEM WILL BE ASSESSED BY MONITORING LH, FSH AND TESTOSTERONE AT WEEKLY INTERVALS DURING CHRONIC ORAL ADMINISTRATION. ABILITY OF THE AGENTS TO PENETRATE THE BLOOD-TESTICULAR BARRIER (BTB) WILL BE ASSESSED BY RETE TESTIS CANNULATION AND EFFERENT DUCT LIGATION EXPERIMENTS. MECHANISM OF PENETRATION WILL BE DETERMINED IN VITRO, I.E., ACTIVE OR PASSIVE. IF AGENTS PASS THE BTB, THEIR EFFECTS ON DNA, RNA AND PROTEIN SYNTHESIS IN DEVELOPING SPERMATOGONIC CELLS WILL BE DETERMINED. AN EXTENSION OF THIS PROJECT HAS BEEN PROPOSED TO PROVIDE TOXICITY TEST DATA ON SELECTED TRIHALOMETHANE COMPOUNDS WITH RESPECT TO REPRODUCTIVE PERFORMANCE USING LONG-TERM IN VIVO METHODS AND TO MUTAGENICITY USING IN VIVO M

**PROJECT: 00970-ECONOMIC ANALYSIS OF SCRAP FUTURES MARKETS FOR STIMULATING RESOURCE RECOVERY

STARTING/ COMPLETION DATE : 06/76 - 02/79 : FUNDING : ESTIMATED - FY78 / $ 29007
TASK CODE=C624 -7214 **EPA=R804309-01 ** (GRANT) PRIOR FY77 / $ 67950

EPA OFFICER.: UW ALBRECHT EPA/MERL - CINC
INVESTIGATOR.: RC ANDERSON ENV LAW INST
MILESTONES...: 03/79 -INDUSTRY SEMINAR ON FEASIBILITY OF SCRAP FUTURE MARKETS
PLAN ID.....: (AP=624)(DU=L110) CONSERVATION AND UTILIZATION TECHNOLOGY ASSESSMENT
MANDATE.....: 30=99 OMICS 0001
ORDIS CODES..: RECN=000970 SSIE=GMA 5433 EPA =R804309-01 TASK=C624 -7214
ORD =RC10830-3078 MAND=30-99 AP =624
DU =L110 LABT=ALN

PROJ STATUS..: PROJECT=ACTIVE DATA=ORIGINAL CATEGORY=RESEARCH
ABSTRACT.....: PRINCIPAL OBJECTIVES ARE TO DETERMINE THE TECHNICAL AND ECONOMIC FEASIBLITY OF COMMODITY FUTURES MARKETS FOR SECONDARY MATERIALS. BASIC QUESTIONS TO WHICH ANSWERS WILL BE SOUGHT INCLUDE: (1) ARE SECONDARY MATERIALS AMENABLE TO COMMODITY FUTURES MARKETS? (2) WOULD FUTURES MARKETS INCREASE CAPITAL FLOW TO THE SALVAGE MARKET INDUSTRY AND IMPROVE SUPPLY DEMAND ELASTICITIES?, (3) WHAT WOULD BE THE NATURE OF THE BENEFITS TO MARKET PARTICIPANTS AND SOCIETY?, AND (4) WHAT WOULD BE THE COST TO SOCIETY? RESEARCH WILL INCLUDE INTERVIEWS WITH OFFICIALS OF COMMODITY FUTURES TRADING COMMISSIONS AND MERCANTILE EXCHANGES TO OBTAIN THEIR VIEWS AS TO IMPEDIMENTS AND THE POTENTIAL ROLE OF FUTURES MARKETS FOR SECONDARY MATERIALS. EXISTING CASH MARKETS FOR SCRAP WILL BE STUDIED FOR PRICE DETERMINANTS AND APPROPRIATE GRADES AND PRODUCT QUALITIES. A STATISTICAL DETERMINATION OF THE DETERMINANTS OF VOLUME TRADING BASED ON EXISTING MARKETS IS PROPOSED.

**PROJECT: 00476-CHEMICAL RECLAMATION OF SCRAP RUBBER

STARTING/ COMPLETION DATE : 01/77 - 12/79 : FUNDING : ESTIMATED - FY78 / $ 25000
TASK CODE=B624B-401 **EPA=R804321-02 ** (GRANT) PRIOR FY77 / $ 88000

EPA OFFICER.: WW LIBERICK EPA/IERL - CINC
INVESTIGATOR.: JW LARSEN UNIV OF TENNESSEE
GC FRAZIER UNIV OF TENNESSEE
MILESTONES...: 09/79 -GRANT COMPLETION/DRAFT FINAL REPORT
12/79 -FINAL REPORT
PLAN ID.....: (AP=624B)(DU=L110) ENVIRONMENTAL ASPECTS OF ENERGY CONSERVATION/ADVANCED ENERGY
MANDATE.....: 10-99 -NUCLEAR ENERGY) PL 93-577; (RCRA) PL 94-580 0010
10-05 RESOURCE CONSERVATION AND RECOVERY ACT
20-14 DAA FOR SOLID WASTE
ORDIS CODES..: RECN=000476 SSIE=ZZ 421 EPA =R804321-02 TASK=B624B-401
ORD =R810C30-5078 MAND=10-99 MAND=10-05
MAND=20-14 AP =624B DU =L110 LABT=EMI

PROJ STATUS..: PROJECT=ACTIVE DATA=ORIGINAL CATEGORY=RESEARCH
ABSTRACT.....: THE ENVIRONMENTAL PROBLEMS CAUSED BY 200 MILLION TIRES DISCARDED ANNUALLY IN THE UNITED STATES ARE WELL DOCUMENTED. AT PRESENT THERE IS NO GOOD WAY OF DISPOSING OF SCRAP TIRES OR OF RECOVERING THE VALUABLE CARBON MATERIALS WHICH THEY CONTAIN. THE CHIEF OBJECTIVE OF THIS PROJECT IS TO COMPLETE BENCH SCALE ENGINEERING RESEARCH ON A PROCESS WHICH CONVERTS SCRAP RUBBER TO A MIXTURE OF HYDROCARBON GASSES, A LOW SULFUR OIL, AND CARBON BLACK. THIS WILL INVOLVE IDENTIFICATION AND SOLUTION OF TECHNICAL PROBLEMS - FOR EXAMPLE, SEPARATION OF THE CATALYST AND CARBON BLACK. IT WILL INCLUDE A COMPLETE ECONOMIC EVALUATION OF THE PROCESS. QUANTITIES OF THE PRODUCTS WILL BE PRODUCED FOR EVALUATION BY POTENTIAL CUSTOMERS. THE DATA NECESSARY FOR THE DESIGN OF A PILOT PLANT W

**PROJECT: 03184-AUTOMATED MEASUREMENTS OF THE INFRARED SPECTRA OF CHROMATOGRAPHICALLY SEPARATED MATERIALS
STARTING/ COMPLETION DATE : 04/76 - 10/78 : FUNDING : ESTIMATED - FY78 / $ 10000
TASK CODE=K7138-114 **EPA=R804333-02 ** (GRANT) PRIOR FY77 / $ 58500
EPA OFFICER.: LV AZARRAGA EPA/ERL - ATHENS
INVESTIGATOR.: PR GRIFFITHS OHIO UNIV SCH OF ARTS & SCI
MILESTONES...: 09/76 -PROTOTYPE DOUBLE-BEAM FTIR OPERATIONAL
09/78 -FINAL REPORT ON USE OF FTIR AS A CHROMATOGRAPHIC DETECTOR
PLAN ID.....: (AP-7138)(DU-8127) TECH. FOR IDENTIFICATION & MEASUREMENT OF WATER & SOIL CHEMICALS
FINAL OUTPUT.: FINALLY AN INFRARED SCANNER FOR TLC PLATES WILL BE 0029
DEVELOPED. 0029
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-003184 SSIE-GMA 4003 1 EPA -R804333-02 TASK-K7138-114
ORD -RK10830-1078 MAND-10-01 AP -7138
DU -8127 LABT-ALN

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
COMMENT.....: 50--THIS RESEARCH INVOLVES ANALYTICAL METHODS DEVEL 0030
TO PROVIDE A BASIS FOR SETTING AND REGULATING WATER 0030
STANDARDS FOR ALL TYPES OF WATER RESOURCES. 0030
ABSTRACT.....: THIS PROPOSAL DESCRIBED METHODS FOR INCREASING THE SENSITIVITY OF ON-LINE MEASUREMENTS OF THE INFRARED SPECTRA OF SPECIES ELUTING FROM A GAS CHROMATOGRAPH (GC-IR) AND A HIGH PERFORMANCE LIQUID CHROMATOGRAPH (LC-IR) THROUGH THE USE OF DUAL-BEAM FOURIER TRANSFORM SPECTROMETRY. THE OPTICS FOR THESE SYSTEMS HAVE ALREADY BEEN DESIGNED AND CONSTRUCTED AND FURTHER IMPROVEMENTS WILL BE TESTED. IN ADDITION METHODS FOR SOLVENT ELIMINATION FOR LC-IR WILL BE EXPLORED. THE SENSITIVITY OF IN-SITU MEASUREMENTS OF THE INFRARED SPECTRA OF SPECIES SEPARATED BY THIN-LAYER CHROMATOGRAPHY (TLC) WILL BE IMPROVED THROUGH THE APPLICATION OF PROGRAMMED MULTIPLE DEVELOPMENT TO REDUCE THE SPOT SIZE. FINALLY AN INFRARED SCANNER FOR TLC PLATES WILL BE DEVELOPED.

**PROJECT: 02930-GROUNDWATER RESEARCH MONITORING OF ENERGY-RELATED DEVELOPMENTS SAMPLING FREQUENCY FOR WATER QUALITY TREND ANALYSIS
STARTING/ COMPLETION DATE : 10/76 - 09/79 : FUNDING : ESTIMATED - FY78 / $ 196029
TASK CODE=J621A-06 **EPA=R804337-02 ** (GRANT) PRIOR FY77 / $ 100000
EPA OFFICER.: DB GILMORE EPA/EMSL - LAS VEGAS
INVESTIGATOR.: RH HARMESON STATE WATER SURVEY
MILESTONES...: 09/79 -PUBLISH REPORT ON PERCENT DEVIATIONS DETERMINED FROM THE MEDIAN
PLAN ID.....: (AP-621A)(DU-8136) QUALITY ASSURANCE
FINAL OUTPUT.: REPORT ON PERCENT DEVIATIONS DETERMINED FROM MEDIAN 0020
1234571430-DAY AND ANNUAL SAMPLING FREQUENCI 0020
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-002930 SSIE-GMA 5163 EPA -R804337-02 TASK-J621A-06
ORD -RJ10830-1078 MAND-10-01 AP -621A
DU -8136 LABT-MTS

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVE/APPROACH: TO DEVELOP A STATISTICAL BASE FOR EVALUATING THE NECESSARY FREQUENCY OF SAMPLING AND ANALYSIS FOR DATA COLLECTION DESIGNED TO ASSURE ACCURACY IN DETERMINING SHORT-TERM TRENDS IN WATER QUALITY IN STREAMS AND LAKES. CONVERSELY, WE WILL DETERMINE THE AVERAGE PERCENT DEVIATIONS FOR SAMPLING INTERVALS GREATER THAN DAILY. DAILY SAMPLING, BOTH GRAB AND COMPOSITE, WILL BE CONDUCTED AT 6 STREAM SAMPLING SITES AND 3 LAKE SITES. THESE SAMPLES WILL BE ANALYZED FOR 17 PARAMETERS. DATA WILL BE RELATED TO WATERSHED SIZE, STREAM FLOW CHARACTERISTICS, PHYSIOGRAPHIC FEATURES, AND CLIMATOLOGY. FOR LAKES, THE DATA WILL BE RELATED TO SIZE, DEPTH AREA, CHARACTERISTICS OF THE DRAINAGE AREA, AND CLIMATOLOGY. FINAL OUTPUT: A REPORT ON PERCENT DEVIATIONS DETERMINED FROM THE MEDIAN 1-, 2-, 3-, 4-, 5-, 7-, 14-, 30-DAY AND ANNUAL SAMPL

**PROJECT: 01206-ASBESTOS IN DOMESTIC WATER SUPPLIES AND CANCER INCIDENCE IN FIVE CALIFORNIA COUNTIES
STARTING/ COMPLETION DATE : 04/76 - 12/78 : FUNDING : ESTIMATED - FY78 / $ 49000
TASK CODE=D6148-081 **EPA=R804366-02 ** (GRANT) PRIOR FY77 / $ 206491

EPA OFFICER,: LJ MCCABE EPA/HERL - CINC
INVESTIGATOR,: RC COOPER UNIV OF CALIFORNIA SCH OF PUBLIC HLTH
JC MURCHIO UNIV OF CALIFORNIA SCH OF PUBLIC HLTH
RS PAFFENBARGER UNIV OF CALIFORNIA SCH OF PUBLIC HLTH
MILESTONES...: 04/77 -ANNUAL REPORT
04/78 -FINAL REPORT
PLAN ID.....: (AP=6148)(OU=C110) WATER SUPPLY - HEALTH EFFECTS RESEARCH
MANDATE.....: 10-13 SOLID WASTE DISPOSAL ACT
ORDIS CODES..: RECN=00120G SSIE=GMA 2770 2 EPA =R804366-02 TASK=D6148-081
ORD =RD10830-1078 LABN=D6148-013D MAND=10-13
AP =6148 OU =C110 LABT=HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVE OF THE PROJECT IS TO DETERMINE THE ASSOCIATION BETWEEN THE PRESENCE OF ASBESTOS FIBERS IN DRINKING WATER AND THE INCIDENCE OF CANCER IN THE POPULATION SERVED BY SUCH WATER SUPPLIES. THE STUDY WILL BE DIVIDED INTO THREE OVERLAPPING PHASES: THE FIRST PHASE DEALS WITH THE IDENTIFICATION AND DESCRIPTION OF SAN FRANCISCO BAY AREA WATERSHED AND WATER DISTRIBUTION SYSTEMS, WHICH WILL INCLUDE: THE SITE OF WATER SOURCES, THEIR GEOMORPHIC COMPOSITION, GEO-POLITICAL AREA SERVED, METHOD OF WATER TREATMENT AND MEANS OF DISTRIBUTION. THE SECOND PHASE WILL BE DIRECTED TOWARDS THE DETERMINATION OF NUMBER, SIZE AND TYPE OF ASBESTOS FIBERS PRESENT IN THE VARIOUS WATER SUPPLIES BEFORE AND AFTER TREATMENT AND AFTER DISTRIBUTION. THE THIRD PHASE WILL INVOLVE A TABULATION OF TUMOR INCIDENCE AND CANCER MORTALITY DATA FROM THE 3RD NATIONAL CANCER SURVEY CONDUCTED IN THE FIVE SAN FRANCISCO BAY AREA COUNTIES UNDER CONSIDERATION. CORRELATIONS BETWEEN THE OBSERVED OCCURRENCE OF ASBESTOS IN DRINKING WATER AND THE INCIDENCE OF HUMAN CANCER WILL BE DETERMINED USING THE INFORMATION GATHERED IN THE THREE PHASES OF THIS ST

**PROJECT: 00241-DEMONSTRATION OF ULTRAFILTRATION AND CARBON ADSORPTION FOR TREATMENT OF INDUSTRIAL LAUNDRY WASTEWATER

STARTING/ COMPLETION DATE : 01/76 - 08/78 : FUNDING : ESTIMATED - FY78 / $ 6000
TASK CODE=86108-050 **EPA=S804367-01 ** (GRANT) PRIOR FY77 / $ 150000

EPA OFFICER,: RJ TURNER EPA/IERL - CINC
INVESTIGATOR,: M SLUIZER INST OF INDUS LAUNDERERS
A GULLAN ABCOR INC WALDEN RES DIV
MILESTONES...: 06/77 -PRELIMINARY REPORT RECEIVED
08/78 -RECEIVED FINAL REPORT
PLAN ID.....: (AP-6108)(DU-8118) MATERIALS PROCESSING, INDUSTRIAL PT. SOURCES (WATER)
MANDATE.....: 20-62 DAA FOR ENERGY ,MINERALS, AND INDUSTRY
ORDIS CODES..: RECN-000241 SSIE-ZZ 196 EPA -S804367-01 TASK-86108-050
ORD -RB10C30-2078 MAND-20-62 AP -6108
DU -8118 LABT-EMI

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE PURPOSE OF THIS PROGRAM IS TO INVESTIGATE ON A PILOT SCALE THE EFFECTIVENESS OF ULTRAFILTRATION (UF) AND CARBON ADSORPTION FOR THE TREATMENT OF INDUSTRIAL LAUNDERING WASTEWATERS. A FIELD DEMONSTRATION SYSTEM WITH A NOMINAL CAPACITY OF 5000 GPD WILL BE OPERATED FOR A FOUR-MONTH PERIOD ON ACTUAL LAUNDERING EFFLUENT. THE SYSTEM WILL UTILIZE FULL-SIZE SPIRAL WOUND ULTRAFILTRATION MEMBRANE MODULES. THE UF PERMEATE WILL BE FURTHER TESTED BY PASSAGE THROUGH A 2" DIAMETER CARBON COLUMN. THE PROJECT WILL ESTABLISH THE UF/CARBON ADSORPTION SYSTEM'S ECONOMICS, EFFICIENCY OF REMOVAL AND OPTIMUM OPERATING CONDITIONS. THE ECONOMICS FOR FULL-SCALE SYSTEM OF VARYING DAILY CAPACITIES WILL BE DETERMINED. ALSO DURING THIS PROGRAM, THE POSSIBLE PRESENCE AND FATE (AFTER UF/CARBON) OF TOXIC SUBSTANCES IN INDUSTRIAL LAUNDERING WASTEWATER WILL BE INVESTIGATED. THESE STUDIES WILL BE BASED ON THE EPA LISTING OF 65 TOXIC SUBSTANCES. ANALYSES WILL BE PERFORMED BY GC/MS.

**PROJECT: 00756-EFFECTIVENESS OF ACTIVATED CARBON FOR REMOVAL OF TOXIC AND/OR CARCINOGENIC COMPOUNDS FROM WATER SUPPLIES
STARTING/ COMPLETION DATE : 04/76 - 07/79 : FUNDING : ESTIMATED - FY78 / $ 117352
TASK CODE=C614 -7172 **EPA=R804369-03 ** (GRANT) PRIOR FY77 / $ 199818

EPA OFFICER.: A STEVENS EPA/MERL - CINC
INVESTIGATOR.: MJ WEBER UNIV OF MICHIGAN SCH OF ENG
MILESTONES...: 07/77 -INTERIM REPORT
07/78 -INTERIM REPORT
07/79 -PROJECT COMPLETED AND FINAL REPORT PUBLISHED
PLAN ID.....: (AP=614)(DU=C110) PUBLIC SECTOR ACTIVITIES- WATER SUPPLY
MANDATE.....: 10-13 SOLID WASTE DISPOSAL ACT
ORDIS CODES..: RECN-000756 SSIE-ZZ 401 EPA -R804369-03 TASK-C614 -7172
ORD -RC10C40-1078 LABN-C614A-078 MAND-10-13
AP -614 DU -C110 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE COMPLEX PROBLEM OF TRACE ORGANICS CONTAMINANTS IN WATER SUPPLIES CAN BE BROADLY DIVIDED INTO TWO MAJOR CATEGORIES; 1) NTURALLY OCCURRING ORGANIC SUBSTANCES THAT ARE TRANSFORMED TO POTENTIALLY MORE HARMFUL SPECIES BY WATER TREATMENT OPERATIONS SUCH AS CHLORINATION; AND, 2) COMPOUNDS OF INDUSTRIAL, AGRICULTURAL AND OTHER MAN-RELATED ORIGIN THAT ARE NOW INDIGENOUS TO MANY RAW WATER SUPPLIES AND WHICH RESIST REMOVAL BY CONVENTIONAL WATER TREATMENT PRACTICES. SUBSTANTIAL EFFORT IS BEING DIRECTED BY THE U.S.E.P.A. TO RESOLUTION OF PROBLEMS ASSOCIATED WITH THE FIRST CATEGORY OF COMPOUNDS; ONE POTENTIAL SOLUTION IS TO USE ACTIVATED CARBON TREATMENT IN ADVANCE OF CHLORINATION TO ELIMINATE THE PRECURSOR COMPOUNDS. THE PROPOSED RESEARCH WILL BE DIRECTED TO REMOVAL OF THE SECOND CATEGORY OF CONTAMINANTS, TO AN EVALUATION OF THE COMPETITIVE EFFECTS THAT NATURALLY OCCURRING ORGANICS HAVE ON THE EFFECTIVENESS OF CARBON FOR REMOVAL OF THE SECOND CATEGORY OF CONTAMINANTS ON A LONG TERM CONTINUOUS BASIS, TO THE EFFECTS THAT OTHER MAJOR WATER TREATMENT OPERATIONS HAVE ON THIS EFFECTIVENESS, AND TO QUANTIFICATION OF THE ASSOCIATED ADSORPTION DYNAMICS TO FACILITATE OPTIMUM DESIGN AND APPLICATION METHODOLOGY.

2392

**PROJECT: 01074-MONITORING FOR PATHOGENIC NAEGLERIA

STARTING/ COMPLETION DATE : 05/76 - 10/78 : FUNDING : ESTIMATED - FY78 / $ 15100
TASK CODE=D607C-024A **EPA=R804375-02 ** (GRANT) PRIOR FY77 / $ 160500

EPA OFFICER.: M JAKUBOWSKI EPA/HERL - CINC
INVESTIGATOR.: FM HELLINGS STATE EPIDEM RES CTR HLTH & REHAB SVCS
AL LEWIS STATE EPIDEM RES CTR HLTH & REHAB SVCS
MILESTONES...: 05/77 -ANNUAL REPORT
10/78 -FINAL REPORT
PLAN ID.....: (AP-607C)(DU-8103) WATER QUALITY HEALTH EFFECTS: CRITERIA FOR RECREATIONAL & SHELLFISH-GROWING WATERS
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
30-99 OBIOLOGY
0003
ORDIS CODES..: RECN-001074 SSIE-GMA 5394 EPA -R804375-02 TASK-D607C-024A
ORD -RD10830-5078 MAND-10-01 MAND-30-99
AP -607C DU -8103 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVE OF THIS CONTINUATION GRANT IS TO DEFINE THE DISTRIBUTION OF PATHOGENIC NAEGLERIA IN THE STATE OF FLORIDA. MULTIPLE ISOLATES HAVE BEEN MADE FROM FRESHWATER LAKES AS WELL AS THERMALLY POLLUTED ONES. OVERWINTERING APPEARS TO BE CONFINED TO LAKE BOTTOM SANDS AND/OR SEDIMENTS. OVER THE NEXT YEAR THIS ASPECT WILL BE OR SHOULD BE CONFIRMED. A RAPID METHOD FOR IDENTIFICATION HAS BEEN DEVELOPED BUT REQUIRES ADDITIONAL TESTING OF SPECIMENS FROM VARIOUS AREAS. IMMUNOLOGICAL AND PHYSIOCHEMICAL ASPECTS OF PATHOGENIC NAEGLERIA AND SEROPOSITIVE NONPATHOGENIC NAEGLERIA WILL BE INVESTIGATED TO DETERMINE THEIR RELATIONSHIP. A ONE-TIME SURVEY OF WATER AND SEDIMENTS FROM APPROXIMATELY 20 GEORGIA LAKES WILL BE CONDUCTED IN AUGUST, 1978.

210

**PROJECT: 03190-DEVELOP PATTERN RECOGNITION COMPUTER PROGRAM AND DATA BANK FOR GAS PHASE FTIR SPECTRA
STARTING/ COMPLETION DATE : 01/76 - 09/79 : FUNDING : ESTIMATED - FY78 / $ 40950
TASK CODE=K7138-122 **EPA=R804381 ** (GRANT) PRIOR FY77 / $ 123400
EPA OFFICER.: LV AZARRAGA EPA/ERL - ATHENS
INVESTIGATOR.: T ISENHOUR UNIV OF NORTH CAROLINA SCH OF ARTS & SCI
MILESTONES...: 01/78 -DELIVER WORKING PROGRAM
03/79 -FINAL REPORT PATTERN RECOG. PROGRAM AND DATA BANK FOR GAS PHASE F TIR
PLAN ID.....: (AP-7138)(DU-8127) TECH. FOR IDENTIFICATION & MEASUREMENT OF WATER & SOIL CHEMICALS
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
CURR. RESULTS: A PROGRAM HAS BEEN DEVELOPED TO RECONSTRUCT THE GAS 0030
CHROMATOGRAM BASED ON THE INTERFEROMETRIC DATA. 0030
SIX SPECIFIC IR SEARCH PROGRAMS HAVE BEEN WRITTEN. 0030
ORDIS CODES..: RECN-003190 SSIE-ZZ 328 EPA -R804381 TASK-K7138-122
ORD -RK10C30-1078 MAND-10-01 AP -7138
DU -8127 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
COMMENT.....: 50--THIS RESEARCH INVOLVES ANALYTICAL METHODS DEVEL 0030
TO PROVIDE A BASIS FOR SETTING AND REGULATING WATER 0030
STANDARDS FOR ALL TYPES OF WATER RESOURCES. 0030
ABSTRACT.....: TO FACILITATE IDENTIFICATION OF ORGANIC POLLUTANTS BY FOURIER TRANSFORM SPECTROSCOPY (FTIR), A GRANTEE WILL DEVELOP A COMPUTER PROGRAM FOR CHARACTERIZATION OF ORGANIC MOLECULES BY PATTERN RECOGNITION OF INFRARED SPECTRA. THE PROGRAM WILL BE DESIGNED TO FUNCTION ON THE GCFTIR SYSTEM'S DEDICATED COMPUTER. CURRENT COLLECTIONS CONTAIN CONDENSED PHASE IR SPECTRA. BECAUSE THESE SPECTRA DO NOT CORRESPOND TO GAS PHASE SPECTRA, A DATA BASE OF GAS PHASE IR REFERENCE SPECTRA WILL BE COMPILED. THE DATA BASE, WHICH WILL BE EXPANDED UNDER K7138144, AND THE COMPUTER PROGRAM WILL BE USED TO DEVELOP TECHNIQUES TO IDENTIFY ORGANIC ENVIRONMENTAL POLLUTANTS. RESULTS: 1) A PROGRAM HAS BEEN DEVELOPED TO RECONSTRUCT THE GAS CHROMATOGRAM BASED ON THE INTERFEROMETRIC DATA. 2) SIX SPECIFIC IR SEARCH PROGRAMS HAVE BEEN WRITTEN.

**PROJECT: 03988-STATUS OF OZONATION AND CHLORINE DIOXIDE TECHNOLOGIES OF MUNICIPAL WATER SUPPLIES (ASSESSMENT OF BAC FOR INDUSTRIAL WASTEWATER TREAT
STARTING/ COMPLETION DATE : 12/77 - 12/78 : FUNDING : ESTIMATED - FY78 / $ 20000
TASK CODE=V610 -04 **EPA=R804385 ** (GRANT) PRIOR FY /
EPA OFFICER.: PE DESROSIERS EPA/HDQTRS- OEMI
INVESTIGATOR.: GW MILLER PUBLIC TECHNOLOGY INC
RG RICE PUBLIC TECHNOLOGY INC
M ROBSON PUBLIC TECHNOLOGY INC
MILESTONES...: 12/78 -FINAL SEPARATE REPORT COVERING INDUSTRIAL APPLICATION OF BAC
PLAN ID.....: (AP-610)(DU-8118) MINERALS PROCESSING AND MANUFACTURING INDUSTRIES
MANDATE.....: 20-10 AA FOR WATER AND HAZARDOUS MATERIALS
ORDIS CODES..: RECN-003988 SSIE-GMA 5270 EPA -R804385 TASK-V610 -04
ORD -RV10B30-2078 MAND-20-10 AP -610
DU -8118 LABT-EMI

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: A FACT-FINDING, STATE-OF-THE-ART SURVEY OF MUNICIPAL WATER TREATMENT AND INDUSTRIAL WASTEWATER TREATMENT INVOLVING THE USE OF BIOLOGICAL ACTIVATED CARBON (BAC) IN SELECTED FOREIGN COUNTRIES.

**PROJECT: 00728-ASSESSMENT OF BAC FOR INDUSTRIAL WATER TREATMENT AND EVALUATION OF STATE-OF-THE-ART OF CORROSION CONTROL TECHNOLOGY (ABBREV)
STARTING/ COMPLETION DATE : 06/76 - 09/78 : FUNDING : ESTIMATED - FY78 / $ 9874
TASK CODE=C614 -7140 **EPA=R804385-01 ** (GRANT) PRIOR FY77 / $ 111753

EPA OFFICER.: JK CARSWELL EPA/MERL - CINC
INVESTIGATOR.: GW MILER PUBLIC TECHNOLOGY INC
RL SCULLIN PUBLIC TECHNOLOGY INC
DH HOUCK PUBLIC TECHNOLOGY INC
MILESTONES...: 10/79 -PROJECT REPORT PUBLISHED
PLAN ID.....: (AP-614)(DU-C110) PUBLIC SECTOR ACTIVITIES- WATER SUPPLY 0015
MANDATE.....: 30-99 NEERING/CHEMISTRY
ORDIS CODES..: RECN-000728 SSIE-GMA 4033 1 EPA -R804385-01 TASK-C614 -7140
ORD -RC10830-3078 MAND-30-99 AP -614
DU -C110 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THIS RESEARCH PROJECT IS A FOLLOW-UP STUDY TO AN INVESTIGATION OF OZONE AND CHLORINE DIOXIDE USE IN MUNICIPAL WATER TREATMENT. THE PRIMARY OBJECTIVE IS TO OBTAIN DATA ON ENGINEERING DESIGN, COSTS, REGENERATION CRITERIA, AND MICROBIOLOGICAL ASPECTS OF BIOLOGICAL ACTIVATED CARBON--THE USE OF PREOZONATION BEFORE GRANULAR ACTIVATED CARBON. A THREE WEEK TOUR OF EUROPEAN WATER TREATMENT PLANTS USING BAC WILL BE CONDUCTED BY A TEAM OF SCIENTISTS AND ENGINEERS. BAC WILL BE ASSESSED FOR ITS POTENTIAL USE IN INDUSTRIAL AS WELL AS MUNICIPAL FACILITIES. ONE PART OF THE EFFORT WILL BE TO OBTAIN RELEVANT LITERATURE AND TO WRITE A BRIEF REPORT ON CORROSION CONTROL AND RESEARCH WORK IN EUROPE. A FINAL REPORT ON BIOLOGICAL ACTIVATED CARBON USE IN EUROPE WILL BE DEVELOPED FOR THE EPA. A LITERATURE SEARCH ON BAC ALSO WILL BE CONDUCTED.

212

**PROJECT: 02811-STUDIES TO IMPROVE THE RELIABILITY AND SENSITIVITY OF BACTERIAL MUTAGENESIS AS A SCREEN FOR ENVIRONMENTAL CARCINOGENS
STARTING/ COMPLETION DATE : 04/76 - 04/79 : FUNDING : ESTIMATED - FY78 / $ 178411
TASK CODE=H629A-7911 **EPA=R804395-02 ** (GRANT) PRIOR FY77 / $ 100000

EPA OFFICER,: MD WATERS EPA/HERL - RTP
INVESTIGATOR,: B COMMONER WASHINGTON UNIV CTR FOR THE BIOL OF NAT SYSS
A VITHAYATHIL WASHINGTON UNIV CTR FOR THE BIOL OF NAT SYSS
M KOMERYNSKY WASHINGTON UNIV CTR FOR THE BIOL OF NAT SYSS
S NAIR WASHINGTON UNIV CTR FOR THE BIOL OF NAT SYSS

MILESTONES...: 06/77 -REPORT ON THE LIQUID SUSPENSION SYSTEM
08/77 -REPORT ON MICROSOMAL EFFECT WITH STRAIN TA1528
01/78 -REPORT ON MUTAGENESIS SCREENING OF URINE
10/78 -REPORT ON ISOLATION AND PURIFICATION OF BEEF EXTRACT MUTAGEN

PLAN ID.....: (AP=629A)(DU=L105) MULTI-ROUTE EXPOSURE: ADVERSE EFFECTS, TOXIC SUBSTANCES

MANDATE.....: 10-06 FEDERAL INSECTICIDE, FUNGICIDE AND RODENTICIDE AC 0016
30-99 OBIAL MUTAGENESIS

ORDIS CODES..: RECN-002811 SSIE-GMA 4282 1 EPA -R804395-02 TASK-H629A-7911
ORD -RH10830-5078 LABN-H629A-8911 MAND-10-06
MAND-30-99 AP -629A DU -L105 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH

ABSTRACT.....: OBJECTIVES: THE PROPOSED PROGRAM OF RESEARCH IS DESIGNED TO IMPROVE THE RELIABILITY AND SENSITIVITY OF THE BACTERIAL MUTAGENESIS TECHNIQUES AS A SCREEN FOR THE DETECTION OF ENVIRONMENTAL CARCINOGENS. IN ORDER TO ACHIEVE THIS OBJECTIVE THE RESEARCH IS CONCENTRATING ON ELUCIDATING THE MECHANISM OF MICROSOMAL ACTIVATION WHICH OCCURS IN THIS TECHNIQUE AND OF IMPROVING THE SPECIFICITY OF THIS PROCESS. APPROACH: THE BASIC APPROACH EMPLOYED IN THIS RESEARCH PROGRAM IS TO ANALYZE THE BIOCHEMICAL MECHANISMS INVOLVED IN MICROSOMAL ACTIVATION. CURRENT PLANS: CURRENT RESEARCH PLANS ARE DESIGNED TO ELUCIDATE FURTHER OUR RECENT DISCOVERY THAT MICROSOME PREPARATIONS ARE THEMSELVES CAPABLE OF INDUCING A SIGNIFICANT INCREASE IN THE MUTATION RATES OF TWO STRAINS OF SALMONELLA, TA-1535 AND TA-98. SPECIFICALLY, WE PLAN TO DESCRIBE THE BIOCHEMICAL PROCESSES CARRIED OUT BY THE MICROSOMES THAT MEDIATE THIS EFFECT AND THE SUBSTANCES IN THE BACTERIAL CELLS THAT ARE ACTED UPON.

**PROJECT: 02629-STUDIES TO IMPROVE THE RELIABILITY AND SENSITIVITY OF BACTERIAL
MUTAGENESIS AS A SOURCE FOR ENVIRONMENTAL CARCINOGENS
STARTING/ COMPLETION DATE : 04/76 - 04/79 : FUNDING : ESTIMATED - FY78 / $ 3514
TASK CODE=H615A-8977 **EPA=R804395-02 ** (GRANT) PRIOR FY77 / $ 100000

EPA OFFICER,: MD WATERS EPA/HERL - RTP
INVESTIGATOR,: B COMMONER WASHINGTON UNIV CTR FOR THE BIOL OF NAT SYSS
A VITHAYATHIL WASHINGTON UNIV CTR FOR THE BIOL OF NAT SYSS
M KOMERYNSKY WASHINGTON UNIV CTR FOR THE BIOL OF NAT SYSS
S NAIR WASHINGTON UNIV CTR FOR THE BIOL OF NAT SYSS

MILESTONES...: 06/77 -REPORT ON THE LIQUID SUSPENSION SYSTEM
08/77 -REPORT ON MICROSOMAL EFFECT WITH STRAIN TA1528
01/78 -REPORT ON CUTANESIS SCREENING OF URINE
10/78 -REPORT ON ISOLATION AND PURIFICATION OF BEEF EXTRACT MUTAGEN

PLAN ID.....: (AP=615A)(OU=E105) MULTI-ROUTE EXPOSURES: HEALTH IMPLICATIONS OF PESTICIDES

MANDATE.....: 10-06 FEDERAL INSECTICIDE, FUNGICIDE AND RODENTICIDE AC
30-99 OBIAL MUTAGENESIS
0012

ORDIS CODES..: RECN-002629 SSIE-GMA 5475 EPA -R804395-02 TASK-H615A-8977
ORD -RH10830-5078 MAND-10-06 MAND-30-99
AP -615A OU -E105 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH

ABSTRACT.....: OBJECTIVES: THIS RESEARCH PROGRAM IS DESIGNED TO IMPROVE THE RELIABILITY AND SENSITIVITY OF THE AMES BACTERIAL MUTAGENESIS TECHNIQUE AS A SCREEN FOR THE DETECTION OF ENVIRONMENTAL CARCINOGENS. IN ORDER TO ACHIEVE THIS OBJECTIVE THE RESEARCH IS CONCENTRATING ON ELUCIDATING THE MECHANISM OF MICROSOMAL ACTIVATION WHICH OCCURS IN THIS TECHNIQUE AND ON IMPROVING THE SPECIFICITY OF THIS PROCESS. APPROACH: THE BASIC APPROACH EMPLOYED IN THIS RESEARCH PROGRAM IS TO ANALYZE THE BIOCHEMICAL MECHANISM INVOLVED IN MICROSOMAL ACTIVATION. CURRENT PLANS: CURRENT RESEARCH PLANS ARE DESIGNED TO ELUCIDATE FURTHER THE RECENT DISCOVERY THAT MICROSOME PREPARATIONS ARE THEMSELVES CAPABLE OF INDUCING A SIGNIFICANT INCREASE IN THE MUTATION RATES OF TWO STRAINS OF SALMONELLA, TA-1538 AND TA-98. SPECIFICALLY, IT IS PLANNED TO DESCRIBE THE BIOCHEMICAL PROCESSES CARRIED OUT BY THE MICROSOMES THAT MEDIATE THIS EFFECT AND THE SUBSTANCES IN THE BACTERIAL CELLS THAT ARE ACTED UPON.

**PROJECT: 03925-COMPOUNDS PRODUCED FROM PETROLEUM UTILIZATION ON SELECTED MARINE INVERTEBRATES (ABBREV)
STARTING/ COMPLETION DATE : 06/76 - 09/78 : FUNDING : ESTIMATED - FY78 / $ 20000
TASK CODE=Q787 -06 **EPA=R804427-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: J COUCH EPA/ERL -GULF BREEZE
INVESTIGATOR.: MC MIX OREGON STATE UNIV SCH OF SCI/ATMOS SCI DEPT
MILESTONES...: 09/78 -FINAL REPORT
PLAN ID.....: (AP-787)(DU-) * NO TEXT FOUND **
MANDATE.....: 10-03 TOXIC SUBSTANCES CONTROL ACT
10-06 FEDERAL INSECTICIDE, FUNGICIDE AND RODENTICIDE AC
20-64 DAA FOR HEALTH AND ECOLOGICAL EFFECTS
ORDIS CODES..: RECN-003925 SSIE-GMA 5506 EPA -R804427-01 TASK-Q787 -06
ORD -RQ10830-5078 MAND-10-03 MAND-10-06
MAND-20-64 AP -787 LABT-HEF

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVES: 1. TO DETERMINE THE CONCENTRATION (BODY BURDENS) OF SELECTED ENVIRONMENTAL CHEMICAL CARCINOGENS IN ECONOMICALLY-IMPORTANT MOLLUSKS AND CRUSTACEANS FROM OREGON BAYS, ESTUARIES AND INSHORE AREAS. 2. TO DETERMINE IF THERE IS A POTENTIAL PUBLIC HEALTH HAZARD TO MAN FROM CONSUMING SHELLFISH, HARVESTED FROM OREGON BAYS, ESTUARIES AND INSHORE AREAS, WHICH CONTAIN PETROLEUM BY-PRODUCTS THAT ARE CARCINOGENIC. 3. TO SURVEY POPULATIONS OF BIVALVE MOLLUSKS, DETERMINE THE INCIDENCE OF NEOPLASTIC DISEASES IN THESE POPULATIONS AND ASCERTAIN IF THERE IS ANY CORRELATION BETWEEN CARCINOGENIC BODY BURDENS AND THE INCIDENCES OF SUCH DISEASES. 4. TO IDENTIFY POINT SOURCES OF CHEMICAL CARCINOGENS THAT ARE PRESENT IN OREGON BAYS AND ESTUARIES UTILIZED IN THIS STUDY. 5. TO DETERMINE RATES OF CARCINOGENIC POLYCYCLIC AROMATIC HYDROCARBON UPTAKE AND ELIMINATION IN BIVALVE MOLLUSKS. APPROACH AND PROGRESS: EXTENSIVE PRELIMINARY INVESTIGATIONS HAVE BEEN CONDUCTED TO: DETERMINE WHICH OREGON BAYS WILL BE UTILIZED IN THE STUDY; ASCERTAIN WHICH SHELLFISH SPECIES WILL BE USED; LOCATE SITES AT WHICH SHELLFISH CAN BE CONTINOUSLY SAMPLED. BIVALVE MOLLUSKS FROM DIFFERENT HABITATS IN THE VARIOUS BAYS ARE ANALYZED FOR THE PRESENCE AND AMOUNT OF BENZO(A)PYRENE (BAP) MONTHLY OF BIMONTHLY. HISTOLOGICAL SECTIONS ARE PREPARED SO THAT DIAGNOSES CAN BE MADE AND NEOPLASTIC DISEASES, IF PRESENT, CAN BE IDENTIFIED.

**PROJECT: 02237-DEVELOPMENT OF REAL-TIME AEROSOL SIZE SPECTRUM ANALYZER EMPLOYING RELAXATION-TIME MEASUREMENT

STARTING/ COMPLETION DATE : 06/76 - 05/79 : FUNDING : ESTIMATED - FY78 / $ 40388
TASK CODE=G7128-8E-39 **EPA=R804429-03 ** (GRANT) PRIOR FY77 / $ 86739

EPA OFFICER,:	CW LEWIS	EPA/ESRL - RTP	
INVESTIGATOR,:	MK TESTERMAN	UNIV OF ARKANSAS	GRAD INST OF TECH
	MK MAZUMDER	UNIV OF ARKANSAS	GRAD INST OF TECH
	RA SIMS	UNIV OF ARKANSAS	GRAD INST OF TECH
	PC MCLEOD	UNIV OF ARKANSAS	GRAD INST OF TECH
	GS BALLARD	UNIV OF ARKANSAS	GRAD INST OF TECH

MILESTONES...: 04/78 -FIRST PROTOTYPE COMPLETED AND DELIVERED
06/79 -FINAL PROTOTYPE COMPLETED AND DELIVERED

PLAN ID.....: (AP-7128)(OU-A130) CHAR. AND MEASUREMENT METHODS DEVELOPMENT (AIR)

FINAL OUTPUT,: TWO PROTOTYPE INSTRUMENTS --ONE FOR LABORATORY USE, 0046
ANOTHER FIELD PORTABLE ONE --BY WHICH THE FEASIBILI 0046
OF THE MEASUREMENT CONCEPT CAN BE JUDGED. BASED ON 0046
PROTOTYPES DELIVERED, THE PROJECT SHOULD DEMONSTRAT 0046
WHETHER OR NOT A NEW METHOD FOR MEASURING AMBIENT 0046
AEROSOL PARTICLE SIZE DISTRIBUTIONS IS VIABLE. 0046

MANDATE.....: 10-02 CLEAN AIR ACT

CURR. RESULTS: THE FIRST PROTOTYPE HAS BEEN DELIVERED FOR EVALUATI 0046

ORDIS CODES..: RECN-002237 SSIE-GMA 2802 2 EPA -R804429-03 TASK-G7128-8E-39
ORD -RG10830-1078 LABN-G7128-88-29 MAND-10-02
AP -7128 OU -A130 LABT-ALN

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH

ABSTRACT.....: OBJECTIVE/APPROACH: TO DEVELOP AN INSTRUMENT FOR REAL-TIME MEASUREMENT OF THE AERODYNAMIC SIZE DISTRIBUTION OF AMBIENT AEROSOL PARTICLES. THE METHOD EMPLOYS A LASER-DOPPLER TECHNIQUE COMBINED WITH ACOUSTICAL OSCILLATION OF SINGLE AEROSOL PARTICLES. FINAL OUTPUTS: TWO PROTOTYPE INSTRUMENTS -- ONE FOR LABORATORY USE, AND ANOTHER FIELD PORTABLE ONE -- BY WHICH THE FEASIBILITY OF THE MEASUREMENT CONCEPT CAN BE JUDGED. BASED ON THE PROTOTYPES DELIVERED, THE PROJECT SHOULD DEMONSTRATE WHETHER OR NOT A NEW METHOD FOR MEASURING AMBIENT AEROSOL PARTICLE SIZE DISTRIBUTIONS IS VIABLE. RESULTS TO DATE: THE FIRST PROTOTYPE HAS BEEN DELIVERED FOR EVALUATION.

2367

**PROJECT: 00758-CHLORINATION OF AQUATIC HUMIC SUBSTANCES

STARTING/ COMPLETION DATE : 07/76 - 07/79 : FUNDING : ESTIMATED - FY78 / $ 117057
TASK CODE-C614 -7173 **EPA-R804430-03 ** (GRANT) PRIOR FY77 / $ 231211

EPA OFFICER,: AA STEVENS EPA/MERL - CINC
INVESTIGATOR,: RF CHRISTMAN UNIV OF NORTH CAROLINA SCH OF PUBLIC HLTH
JD JOHNSON UNIV OF NORTH CAROLINA SCH OF PUBLIC HLTH
CR OMELIA UNIV OF NORTH CAROLINA SCH OF PUBLIC HLTH
PC SINGER UNIV OF NORTH CAROLINA SCH OF PUBLIC HLTH
FK FFAENDER UNIV OF NORTH CAROLINA SCH OF PUBLIC HLTH
MILESTONES...: 07/77 -INTERIM REPORT
07/78 -INTERIM REPORT
10/79 -FINAL REPORT PUBL.
PLAN ID.....: (AP-614)(DU-C110) PUBLIC SECTOR ACTIVITIES- WATER SUPPLY
MANDATE.....: 10-13 SOLID WASTE DISPOSAL ACT
ORDIS CODES..: RECN-000758 SSIE-ZZ 402 EPA -R804430-03 TASK-C614 -7173
ORD -RC10C30-1078 LABN-C614A-079 MAND-10-13
AP -614 DU -C110 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVES OF THIS RESEARCH PROJECT ARE TO A) ESTABLISH THE RELATIVE CONTRIBUTION TO TOTAL TRIHALOMETHANE PRODUCTION OF NATURAL AQUEOUS HUMIC MATERIAL IN WATERS FROM DIFFERENT SOURCES, B) CHARACTERIZE THE CHEMICAL NATURE OF THE REACTIONS THAT OCCUR BETWEEN AQUEOUS HUMIC MATERIALS AND CHLORINE, AND C) ASSESS THE WATER TREATMENT IMPLICATIONS OF PRECHLORINATION OF HUMIC-CONTAINING WATERS WITH RESPECT TO THE FORMATION OF TRIHALOMETHANES AND OTHER CHLORINATED ORGANIC SPECIES. THE EXPERIMENTAL APPROACH INCLUDES LABORATORY CHLORINATION STUDIES AND GC/MS IDENTIFICATION OF REACTION PRODUCTS WITH DIFFERENT NATURAL HUMIC WATERS AND VARIOUS MODEL HUMIC STRUCTURES. A WIDE RANGE OF MODEL ORGANIC COMPOUNDS REPRESENTATIVE OF NATURAL HUMIC MATERIAL WILL BE CHLORINATED OVER A RANGE OF PH, CHLORINE TO CARBON RATIOS, AND TEMPERATURES REPRESENTATIVE OF CONDITIONS IN WATER TREATMENT PLANT OPERATIONS. TRIHALOMETHANES AND TOTAL ORGANIC CHLORINE CONCENTRATIONS WILL BE MEASURED. HUMIC FRACTIONS EXTRACTED FROM RAW WATER SUPPLIES WILL ALSO BE CHLORINATED, IN THE PRESENCE AND ABSENCE OF SURFACE AND TREATED IN THE SAME MANNER AS THE HO

**PROJECT: 03337-GROUND WATER INJECTION OF RECLAIMED WATER IN PALO ALTO

STARTING/ COMPLETION DATE : 04/76 - 07/79 : FUNDING : ESTIMATED - FY78 / $ 250000
TASK CODE=L614 -01 **EPA=R804431 ** (GRANT) PRIOR FY77 / $ 702365

EPA OFFICER,: MR SCALF EPA/ERL - ADA
INVESTIGATOR,: PL MCCARTY STANFORD UNIV SCH OF ENG/CIV ENG DEPT
MILESTONES,..: 05/77 -INTERIM REPORT
05/78 -INTERIM REPORT
05/79 -FINAL REPORT
PLAN ID,.....: (AP=614)(DU=C110) PUBLIC SECTOR ACTIVITIES- WATER SUPPLY
ORDIS CODES,.: RECN=003337 SSIE-GMA 2804 2 EPA -R804431 TASK=L614 -01
AP =614 DU =C110 LABT=ALW
PROJ STATUS,.: PROJECT=ACTIVE DATA=ORIGINAL CATEGORY= UNKN
ABSTRACT,....: OBJECTIVE: RECLAIMED MUNICIPAL WASTEWATER IS BEING INJECTED INTO A CONFINED AQUIFER TO RECHARGE THE GROUND WATER SUPPLY AS WELL AS TO REPEL SALTWATER INTRUSION. IN THIS PROJECT, THE WATER QUALITY CHANGES THAT OCCUR AS THE WATER PASSES THROUGH THE GROUND ARE BEING EVALUATED WITH SPECIAL EMPHASIS ON THE TRANSPORT OF ORGANIC TRACE CONTAMINANTS AND VIRUSES. APPROACH: THE EFFECTIVENESS OF THE AQUIFER IN ATTENUATING THE MOVEMENT OF CONTAMINANTS IS BEING INVESTIGATED AND THE FIELD CAPACITY FOR REMOVAL IS ESTIMATED. LABORATORY STUDIES OF ADSORPTION, BIODEGRADATION, ION EXCHANGE, AND OXIDATION-REDUCTION PHENOMENA ARE BEING CONDUCTED TO EXPLAIN THE WATER QUALITY CHANGES OBSERVED IN THE FIELD. THE POTENTIAL FOR PRECIPITATION REACTIONS IS PREDICTED BY USING COMPUTER MODELS OF THE CHEMICAL EQUILIBRIA. A COMPUTER MODEL HAS BEEN DEVELOPED FOR SIMULATING FLOW AND WATER QUALITY CHANGES IN THE AQUIFER. THE ULTIMATE GOAL IS TO ASSESS THE FEASIBILITY OF REUSING THE EXTRACTED GROUNDWATER IN POTABLE WATER SUPPLIES. PROGRESS: A PROPOSAL FOR THE THIRD AND FINAL YEAR OF THE PROJECT HAS BEEN REVIEWED AND RECOMMENDED FOR FUNDING. THIS THIRD YEAR WILL BE CONCERNED WITH INTENSIVE MONITORING OF THE GROUND WATER NEAR ONE OF THE INJECTION-EXTRACTION WELL DOUBLETS FOR MOVEMENT OF TRACE ORGANICS, LABORATORY STUDY OF KINETICS OF ADSORPTION AND OF MICROBIAL DEGRADATION OF ORGANICS IN AN AQUIFER SYSTEM, AND THE DEVELOPMENT OF A GENERALIZED MATHEMATICAL MODEL FOR SIMILAR INJECTION SYSTEMS. IN ADDITION, HERL-CINCINNATI IS COOPERATING IN THIS THIRD YEAR IN AN EFFORT TO EXAMINE THE PALO ALTO WASTE TREATMENT EFFLUENTS, INCLUDING INJECTION WATER, FOR THE PRESENCE OF ORGANIC MATERIALS WITH MUTAGENIC ACTIVITY.

**PROJECT: 00817-REMOVAL OF TRACE ORGANICS FROM WATER USING ACTIVATED CARBON AND POLYMERIC ADSORBENTS
STARTING/ COMPLETION DATE : 06/76 - 01/79 : FUNDING : ESTIMATED - FY78 / $ 25871
TASK CODE=C614A-7159 **EPA=R804433-01 ** (GRANT) PRIOR FY77 / $ 113000

EPA OFFICER.: OT LOVE EPA/MERL - CINC
INVESTIGATOR.: MJ TARAS AMER WATER WORKS ASSN
C OULMAN AMER WATER WORKS ASSN
JT OCONNER AMER WATER WORKS ASSN
VL SNOEYINK AMER WATER WORKS ASSN
MILESTONES...: 11/76 -SELECT ADSORPTION MEDIA ON BASIS OF BENCH TESTS
03/77 -BEGIN PILOT PLANT STUDIES
05/78 -BENCH SCALE RESULTS SUBMITTED FOR JOURNAL PUBLICATION
10/78 -COMPLETE PILOT PLANT EXPERIMENTATION
01/79 -FINAL REPORT
PLAN ID.....: (AP-614A)(OU-C110) WATER SUPPLY - WATER TREATMENT & SYSTEMS
MANDATE.....: 10-13 SOLID WASTE DISPOSAL ACT
CURR. RESULTS: ADSORPTION MEDIA SELECTED AND PILOT COLUMNS OPERATI 0018
AT KANSAS CITY WATER TREATMENT PLANT. 0018
ORDIS CODES..: RECN-000817 SSIE-ZZ 354 EPA -R804433-01 TASK-C614A-7159
ORD -RC10C30-1078 MAND-10-13 AP -614A
OU -C110 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: ON THE BASIS OF BENCH SCALE STUDIES AND OTHER AVAILABLE PERFORMANCE DATA, POLYMERIC ADSORBENTS WILL BE SELECTED FOR USE IN PILOT SCALE POST FILTRATION ADSORBERS TO DETERMINE THE EFFECTIVENESS OF SYNTHETIC RESINS TO: REMOVE TASTE AND ODOR COMPOUNDS; REMOVE TRIHALOMETHANES; PERFORM THROUGH MULTIPLE INPLACE REGENERATION CYCLES. THE ADSORPTION MEDIA HAS BEEN SELECTED AND THE PILOT COLUMNS ARE OPERATIONAL AT THE KANSAS CITY, NO. WATER TREATMENT PLANT UNDER THE DIRECTION OF DR. O'CONNER. STEAM IS BEING USED TO REGENERATE THE POLYMERIC RESINS IN-PLACE. AN ECONOMIC EVALUATION WILL BE MADE ON THE USE OF RESINS AS A UNIT TREATMENT PROCESS BASED ON THE PILOT SCALE PERFORMANCE.

**PROJECT: 00149-WET SCRUBBING OF IMMERSIBLES (ORGANIC PRODUCTS PROCESSING)

STARTING/ COMPLETION DATE : 04/76 - 12/78 : FUNDING : ESTIMATED - FY78 / $ 50000
TASK CODE=B604B-136 **EPA=R804455-01 ** (GRANT) PRIOR FY77 / $ 85000

EPA OFFICER,: L WEITZMAN EPA/IERL - CINC
INVESTIGATOR,: P CHEREMISINOF NEW JERSEY INST OF TECH
R TRATTNER NEW JERSEY INST OF TECH
MILESTONES...: 12/78 -FINAL REPORT RECEIVED
PLAN ID.....: (AP=6048)(DU=A128) MATERIALS PROCESSING, INDUSTRIAL PT. SOURCES (AIR)
MANDATE.....: 30-99 EMENT EQUIPMENT DEVELOPMENT 0015
ORDIS CODES..: RECN-000149 SSIE-GMA 3749 1 EPA -R804455-01 TASK-B604B-136
ORD -RB10830-3078 MAND-30-99 AP -6048
DU -A128 LABT-EMI

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-REJEARCH
ABSTRACT.....: THE PROPOSED INVESTIGATION IS TO EXAMINE A SERIES OF ORGANIC COMPOUNDS AND THEIR REMOVAL FROM GAS STREAMS BY USE OF AQUEOUS SCRUBBING SOLUTIONS. WATER SCRUBBING OF AIR STREAMS CONTAINING ORGANIC VAPURS IN CONCENTRATION RANGES OF 0.01 LB/M CUBIC FT. TO 1 LB/M CUBIC FT. IS AT PRESENT IMPRACTICAL. ORGANIC COMPOUNDS WITH RELATIVELY HIGH VAPOR PRESSURES OR POOR SOLUBILITY IN WATER ARE NOT EASILY ABSORBED IN CONVENTIONAL WET SCRUBBING PROCESSES. SOLUBILITY IS A FUNCTION OF THE PHYSICAL PROPERTIES OF THE SOLUTE-SOLVENT INTERFACE. IT IS PROPOSED TO STUDY CHANGING SOLUBILITY, WETTING, SURFACE TENSION AND VISCOSITY PROPERTIES AND EFFECTS ON MASS TRANSFER BETWEEN SELECTED ORGANIC VAPORS AND WATER. TO CHANGE THESE PROPERTIES A STUDY OF THE EFFECTS OF VARIOUS SURFACE ACTIVE AGENTS WILL BE UNDERTAKEN. LABORATORY SIMULATION OF MASS TRANSFER CONDITIONS IS TO BE EFFECTED AS A SCREENING MECHANISM FOR THOSE SYSTEMS SHOWING THE GREATEST PROMISE. A PACKED TOWER WITH SUITABLE PACKING, PIPING, CONTROL DEVICES WILL BE USED TO DETERMINE OPERABILITY OF ORGANIC-VAPOR-AQUEOUS SYSTEM ON A SEMI-COMMERCIAL S

**PROJECT: 03693-CYCLING OF XENOBIOTICS THROUGH ESTUARINE AND MARINE SEDIMENTS

STARTING/ COMPLETION DATE : 04/76 - 03/79 : FUNDING : ESTIMATED - FY78 / $ 109900
TASK CODE=Q625F-1-09 **EPA=R804458-02 ** (GRANT) PRIOR FY77 / $ 310000

EPA OFFICER,: FG WILKES EPA/ERL -GULF BREEZE
INVESTIGATOR,: CN DASARO UNIV OF WEST FLORIDA GRADUATE SCH
CR CRIPE UNIV OF WEST FLORIDA GRADUATE SCH
NI RUBINSTEIN UNIV OF WEST FLORIDA GRADUATE SCH
MILESTONES...: 03/78 -REPORT
03/79 -REPORT
PLAN ID.....: (AP=625F)(DU=N140) AIR, WATER AND MULTI-ROUTE EXPOSURE & THEIR EFFECTS (HEALTH)
ORDIS CODES..: RECN-003693 SSIE-GMA 4944 EPA -R804458-02 TASK-Q625F-1-09
AP -625F DU -N140 LABT-HEE
PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY- UNKN
ABSTRACT.....: THIS RESEARCH WILL EXAMINE A MECHANISM OF CYCLING VARIOUS XENOBIOTICS IN AND THROUGH ESTUARINE AND MARINE SEDIMENTS. A LUGWORM ARENICOLA CRISTATA (POLYCHAETA: ARENICOLIDAE), WILL BE STUDIED TO DEFINE AND QUANTIFY MOVEMENT OF COMPOUNDS THROUGH THE SEDIMENT AS A RESULT OF REWORKING AND BIOLOGICAL ACCUMULATION. BEHAVIORAL BIOASSAYS, DESIGNED TO EXAMINE THE EFFECTS OF XENOBIOTICS ON THE INTERACTIONS BETWEEN A PREDATOR AND ITS PREY, WILL BE DEVELOPED. A GRASS SHRIMP, PALAEMONETES PUGIO WILL SERVE AS PREY: WHILE EITHER THE PINFISH, LAGODON RHOMBOIDES OR THE GULF KILLIFISH, FUNDULUS GRANDIS WILL BE USED AS PREDATORS. OTHER BEHAVIORAL BIOASSAYS WILL TEST THE ABILITY OF EXPOSED PINFISH TO AVOID THE FLOUNDER, PARALICHTHYS ALBIGUTTA AND THE RESPONSES OF PINFISH TO GRADIENTS OF XENOBIOTICS IN A SPECIALLY DESIGNED SYSTEM THAT AUTOMATICALLY RECORDS, GRAPHS AND COMPARES ACTIVITY.

**PROJECT: 00126-DEVELOPMENT OF FIELD VIRUS CONCENTRATION TECHNOLOGY

STARTING/ COMPLETION DATE : 11/76 - 10/79 : FUNDING : ESTIMATED - FY78 / $ 28000
TASK CODE-A713C-31 **EPA-R804474-02 ** (GRANT) PRIOR FY77 / $ 43000

EPA OFFICER.: G BERG EPA/EMSL - CINC
INVESTIGATOR.: CA SORBER UNIV OF TEXAS ENV ENG DEPT
BP SAGIK UNIV OF TEXAS ENV ENG DEPT
BE MOORE UNIV OF TEXAS ENV ENG DEPT
MILESTONES...: 03/78 -INTERIM REPORT
11/79 -FINAL REPORT
PLAN ID.....: (AP-713C)(DU-8127) PLAN 713C
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
10-13 SOLID WASTE DISPOSAL ACT
CURR. RESULTS: BENTONITE AS VIRUS ABSORBENT ABANDONED. DIATOMACEOU 0004
EFFECTIVE ALTERNATIVE. PROTOTYPE DEVELOPED AND TES 0004
ORDIS CODES..: RECN-000126 SSIE-ZZ 213 EPA -R804474-02 TASK-A713C-31
LABN-A612-37 MAND-10-01 MAND-10-13
AP -713C DU -8127 LABT-MTS

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY- UNKN
ABSTRACT.....: OBJECTIVES: THE OVERALL OBJECTIVE OF THIS STUDY IS TO OPTIMIZE A FLOW-THROUGH, VIRUS ADSORBING FILTER MEDIA SYSTEM FOR RECOVERING SMALL NUMBERS OF VIRUSES FROM LARGE VOLUMES OF WATER. A HIGH RATE SYSTEM, CAPABLE OF CONCENTRATING AND RECOVERY OF PARTICULATE ASSOCIATED AS WELL AS "FREE" VIRUSES FROM AT LEAST 100 GALLON VOLUMES OF A VARIETY OF WATERS, IS SOUGHT. APPROACH: CURRENT EFFORTS WILL CONCENTRATE ON THREE ASPECTS OF THE STUDY: A) CONTINUED EVALUATION OF CANDIDATE FILTER SYSTEMS CAPABLE OF PROVIDING A SUSTAINED HIGH FLOW RATE IN CONJUNCTION WITH THE USE OF THE DIATOMACEOUS EARTH VIRUS CONCENTRATION PROCEDURE. B) EACH CANDIDATE FILTER MEDIA SYSTEM WILL BE EVALUATED IN TERMS OF THE OPTIMAL VIRUS ELUTION SYSTEM REQUIRED. FACTORS TO BE CONSIDERED ARE SYSTEM HYDRAULICS, SYSTEM MATERIALS (COMPOSITION AND AMOUNT) AND VOLUME AND TYPE OF ELUANT. C) SUCCESSFUL PROTOTYPE FILTER-ELUTION SYSTEMS WILL BE UPGRADED SO THAT MINIMUM TEST VOLUMES OF 100 GALLONS CAN BE PROCESSED. FIELD TESTING IN A VARIETY OF WATERS WILL BE INITIATED. THE COMPARATIVE EVALUATION OF THE DEVELOPED METHODOLOGY WITH COMMERCIAL FLOW-THROUGH VIRUS CONCENTRATION SYSTEMS WHICH CAN HANDLE COMPARABLE VOLUMES OF DIFFERENT WATERS WILL BE CONDUCTED. PROGRESS: THE USE OF BENTONITE AS A VIRUS ADSORBENT FOR A HIGH VOLUME FLOW-THROUGH VIRUS CONCENTRATION PROCEDURE WAS ABANDONED. THIS WAS NECESSITATED BY THE LACK OF A FILTER SYSTEM CAPABLE OF MAINTAINING ITS INTEGRITY UNDER HIGH FLOW CONDITIONS. HOWEVER, DIATOMACEOUS EARTH HAS BEEN SHOWN TO BE AN EFFECTIVE ALTERNATIVE TO BENTONITE AS A VIRUS ADSORBENT. A PROTOTYPE SYSTEM, DESIGNED TO USE DIATOMACEOUS EARTH, HAS BEEN DEVELOPED AND TESTED SUCCESSFULLY.

**PROJECT: 03697-EFFECTS OF POLLUTANTS ON MICROBIAL ACTIVITIES IN ESTUARINE SURFACE FILMS

STARTING/ COMPLETION DATE : 05/76 - 10/79 : FUNDING : ESTIMATED - FY78 / $ 10000
TASK CODE=0714A-1-1 **EPA=R804477-02 ** (GRANT) PRIOR FY76 / $ 100000

EPA OFFICER,: AW BOURQUIN EPA/ERL -GULF BREEZE
INVESTIGATOR,: DG AHERN GEORGIA STATE UNIV MICROBIOL DEPT
WL COOK GEORGIA STATE UNIV MICROBIOL DEPT
A ABDELAL GEORGIA STATE UNIV MICROBIOL DEPT
SA CROW GEORGIA STATE UNIV MICROBIOL DEPT
MILESTONES...: 05/79 -FINAL REPORT
PLAN ID.....: (AP-714A)(DU-E110) FATE & EFFECTS OF SYNTHETIC ORGANIC COMPOUNDS ON AQUATIC ECOSYSTEMS
ORDIS CODES..: RECN-003697 SSIE-GMA 2769 2 EPA -R804477-02 TASK-0714A-1-1
AP -714A DU -E110 LABT-HEE
PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY- UNKN
ABSTRACT.....: STUDIES OF THE RATES OF BIOACCUMULATION AND/OR DEGRADATION OF SELECT HYDROCARBONS, PESTICIDES AND CHLORINATED AROMATICS BY REPRESENTATIVE SURFACE SLICK MICROORGANISMS ARE IN PROGRESS. MINIMAL MUTAGENIC AND INHIBITORY CONCENTRATIONS OF THESE COMPOUNDS ARE BEING DETERMINED FOR VARIOUS PHYSIOLOGICAL GROUPS. ATTEMPTS ARE UNDERWAY TO DEVELOP ASSAY ORGANISMS FOR THE BIODETECTION OF POTENTIALLY HARMFUL CHEMICALS I

**PROJECT: 03734-EFFECT OF TEMPERATURE ON GROWTH AND SURVIVAL OF THE WHITE SUCKER

STARTING/ COMPLETION DATE : 07/76 - 12/78 : FUNDING : ESTIMATED - FY78 / $ 52200
TASK CODE=N608A-107 **EPA=R804501-01 ** (GRANT) PRIOR FY76 / $ 50300

EPA OFFICER,: KF HOKANSON EPA/ERL - DULUTH
INVESTIGATOR,: MW MELLER UNIV OF MINNESOTA AGRIC/ZOOLOGY & ENTOMOLOGY
MILESTONES...: 12/78 -FINAL REPORT
PLAN ID.....: (AP-608A)(DU-B115) FRESHWATER ECOLOGICAL PROCESSESS & EFFECTS
MANDATE.....: 30-99 OGY 0046
ORDIS CODES..: RECN-003734 SSIE-GMA 4927 EPA -R804501-01 TASK-N608A-107
ORD -RN10830-3078 MAND-30-99 AP -608A
DU -B115 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE FIRST OBJECTIVE OF THE PROJECT IS TO DETERMINE THE GROWTH RATE OF CATOSTOMUS COMMERSONI UNDER DIFFERENT TEMPERATURE REGIMES AND TO CONSTRUCT RESPONSE CURVES THAT CAN BE RELATED TO FOOD CONSUMPTION. SUBORDINATE OBJECTIVES ARE (1) TO DETERMINE THE INFLUENCE OF SIZE ON GROWTH RESPONSE AT DIFFERENT TEMPERATURES AND (2) TO DETERMINE THE RELATIONSHIP OF OPTIMUM TEMPERATURE TO INCIPIENT LETHAL TEMPERATURES. A SECOND OBJECTIVE IS TO DETERMINE THE INFLUENCE OF REDUCED RATIOS AS COMPARED TO AD LIBITUM RATIOS ON THE OPTIMUM TEMPERATURE FOR GROWTH IN THREE SIZE GROUPS OF FISH. DATA WILL BE GATHERED AND ANALYZED IN A FORM WHICH WILL PROVIDE INPUT TO ECOSYSTEM MODELING.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
* OFFICE OF RESEARCH AND DEVELOPMENT *
LIST OF PROJECTS FROM MATCHED GRANT SYSTEM INPUT
* O R D I S D A T A E X T R A C T *

**PROJECT: 00245-BAT DEMONSTRATION FOR A CHROME TANNERY

STARTING/ COMPLETION DATE : 04/76 - 12/79 : FUNDING : ESTIMATED FY78 / $ 99000
TASK CODE=R6108-096 **EPA=S804504 ** (GRANT) PRIOR FY77 / $ 149000

EPA OFFICER.: KA DOSTAL EPA/IERL - CINC
INVESTIGATOR.: LK BARBER A.C. LAWRENCE LEATHER CO
ER RAMIREZ A.C. LAWRENCE LEATHER CO
MILESTONES...: 07/78 -FIRST DRAFT REPORT TO CINTI, FOR FORMAT AND REVIEW FROM P.O.
12/79 -FINAL REPORT RECEIVED
PLAN ID.....: (AP-6108)(OU-B118) MATERIALS PROCESSING, INDUSTRIAL PT. SOURCES (WATER)
MANDATE.....: 20-30 AA FOR TOXIC SUBSTANCES
CURR. RESULTS: COMPANY BUILDING NECESSARY FACILITIES TO UNDERTAKE 0015
PROJECT. PRIMARY TREATMENT PROCESS COMPLETE & 0015
OPERATIONAL; SECONDARY PROCESS UNDER CONSTRUCTION. 0015
ORDIS CODES..: RECN-000245 SSIE-ZZ 676 EPA -S804504 TASK-R6108-096
ORD -R810C30-2078 MAND-20-30 AP -6108
OU -B118 LABT-EMI

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE PRIMARY OBJECTIVE OF THE PROJECT IS TO DEMONSTRATE THE TECHNICAL AND ECONOMICAL FEASIBILITY OF MEETING BATEA LIMITS BY A CHROME LEATHER TANNERY UTILIZING ELECTROFLOTATION (LECTRO CLEAN) AND ZONAL CONTROL OF DISSOLVED OXYGEN IN AN OXIDATION DITCH (CARROUSEL) TO ACCOMODATE BOTH AEROBIC NITRIFICATION AND ANAEROBIC DENITRIFICATION. SECONDARY OBJECTIVES ARE WATER REUSE, ENERGY CONSERVATION, AND SOLID WASTE HANDLING AND UTILIZATION. THE APPROACH IS TO OPERATE AND CLOSELY MONITOR A FULL-SCALE TREATMENT PLANT WHICH HAS BEEN DESIGNED TO MEET STRICT EFFLUENT LIMITATIONS IN A NPDES PERMIT. THE PLANT IS TO BE OPERATED TO MEET BATEA GUIDELINES AND THE MEASUREMENTS OF INPUTS AND OUTPUTS MADE TO DEVELOP COST AND TECHNICAL RELIABILITY. THE COMPANY IS BUILDING THE NECESSARY FACILITIES TO UNDERTAKE THE PROJECT. THE PRIMARY TREATMENT PROCESS IS COMPLETE AND OPERATIONAL; THE SECONDARY PROCESS IS UNDER CONSTRUCTION.

**PROJECT: 03146-THE ENVIRONMENTAL AND ECONOMICAL IMPACT OF PLACING SOIL BANK, MARGINAL AND SUBMARGINAL LAND IN CROP PRODUCTION IN GEORGIA

STARTING/ COMPLETION DATE : 07/76 - 09/78 : FUNDING : ESTIMATED - FY78 / $ 8300
TASK CODE=K6178-430 **EPA=R804510-01 ** (GRANT) PRIOR FY77 / $ 75000

EPA OFFICER,: TE WADDELL EPA/ERL - ATHENS
INVESTIGATOR,: FC WHITE UNIV OF GEORGIA AGRONOMY DEPT
WN MUSSER UNIV OF GEORGIA AGRONOMY DEPT
HF PERKINS UNIV OF GEORGIA AGRONOMY DEPT
JF REED UNIV OF GEORGIA AGRONOMY DEPT
MILESTONES...: 12/77 -DRAFT FINAL REPORT
09/78 -REPORT: ENV./ECON. OF CONVERT. SOIL BANK, MARGINAL LAND IN GA. T
PLAN ID.....: (AP-6178)(DU-) NONIRRIGATED CROP PRODUCTION
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-003146 SSIE-GMA 2809 2 EPA -R804510-01 TASK-K6178-430
ORD -RK10830-1078 LABN-K7708-430 MAND-10-01
AP -6178 LABT-ALN

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH

ABSTRACT.....: AS A RESULT OF THE FAVORABLE PROFIT SITUATION IN CROP PRODUCTION, MANY FARMERS HAVE PLACED SOIL BANK, MARGINAL AND SUBMARGINAL LAND INTO ROW CROP PRODUCTION, THE OBJECTIVE OF THIS PROJECT IS TO EVALUATE THE ENVIRONMENTAL AND ECONOMICAL IMPACT OF PLACING THESE LANDS IN CROP PRODUCTION IN GEORGIA. POTENTIAL AND ACTUAL LAND USE CHANGES BY SOIL ASSOCIATION AND LAND CLASSIFICATION WILL BE ESTIMATED USING SECONDARY DATA AND REMOTE SENSING PHOTOS. REPRESENTATIVE LEVELS OF PESTICIDE AND FERTILIZER USES WILL BE ESTIMATED IN ORDER TO DETERMINE ENVIRONMENTAL LOADINGS OF SOILS, PESTICIDES, AND PLANT NUTRIENTS ASSOCIATED WITH VARIOUS LAND USES AND CROP YIELDS FOR MAJOR LAND CLASSIFICATIONS AND SOIL ASSOCIATIONS. INFORMATION DEVELOPED ON CHANGES IN LAND USE PATTERNS AND ENVIRONMENTAL LOADINGS WILL BE USED TO IDENTIFY ACTUAL AND POTENTIAL GEOGRAPHIC DISPERSIONS OF PESTICIDE AND FERTILIZER CONCENTRATIONS RESULTING FROM THE ADDITIONAL ACREAGE IN CROP PRODUCTION. THE NET ECONOMIC IMPACT OF THE CHANGES IN LAND USE WILL BE ASSESSED WITH PARTICULAR ATTENTION TO ESTIMATING THE INCREMENTAL VALUE OF AGRICULTURAL PRODUCTION, NET FARM INCOME AND THE SECONDARY IMPACT ON NATIONAL INCOME. A FINAL REPORT WILL BE ISSUED AT THE END OF THE PROJECT PERIOD.

**PROJECT: 00635-DEMONSTRATE/EVALUATE RECLAMATION, STABILIZATION & EROSION CONTROL OF STRIP-MINED LAND FOR AGRICULTURAL USE WITH MUNICICIPAL SEWAG
STARTING/ COMPLETION DATE : 07/76 - 11/79 : FUNDING : ESTIMATED - FY78 / $ 100000
TASK CODE=C6118-7060 **EPA=S804511-03 ** (GRANT) PRIOR FY77 / $ 200000

EPA OFFICER,: G DOTSON EPA/MERL - CINC
INVESTIGATOR,: M SOPPER STATE DEPT OF ENV RES POB 2063
WC BUCCIARELLI STATE DEPT OF ENV RES POB 2063
JP SNYDER STATE DEPT OF ENV RES POB 2063
WD LACOUR STATE DEPT OF ENV RES POB 2063
LT KARDOS PENNSYLVANIA STATE UNIV INST OF RES ON LAND/WATER RES

MILESTONES...: 11/79 -FINAL REPORT PUBLISHED
PLAN ID.....: (AP-6118)(DU-B106) WASTEWATER TREATMENT TECHNOLOGY PROGRAMS
MANDATE.....: 30-99 EWATER 0015
ORDIS CODES..: RECN-000635 SSIE-ZZ 398 EPA -S804511-03 TASK-C6118-7060
ORD -RC10C51-3078 MAND-30-99 AP -6118
DU -B106 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
COMMENT.....: SPLIT FUNDS 1DC618 PASS THROUGH FUNDS 0015
ABSTRACT.....: OBJECTIVES: 1) TO DETERMINE THE FEASIBILITY OF USING MUNICIPAL SEWAGE SLUDGE TO RECLAIM AND VEGETATE LAND DISTURBED BY MINING ACTIVITIES; 2) TO EVALUATE METHODS FOR THE PROCESSING, TRANSPORTATION, SPREADING AND INCORPORATION OF THE SLUDGE INTO THE LAND; 3) TO DEMONSTRATE APPLICATION RATES THAT WILL MAXIMIZE BENEFITS TO SOILS, IMPROVE WATER QUALITY, AND MAKE LANDS AGRICULTURALLY PRODUCTIVE; 4) TO EVALUATE THE EFFECT OF VARIED SLUDGE APPLICATIONS ON VEGETATION ESTABLISHMENT AND GROWTH (GRASS, LEGUME AND TREE SPECIES), INCLUDING FOLIAR ANALYSIS TO DETERMINE NUTRIENT UPTAKE AND POTENTIAL HEAVY METAL TOXICITY; 5) TO EVALUATE THE EFFECT OF THE SLUDGE APPLICATIONS ON THE CHEMICAL QUALITY OF PERCOLATING RECHARGE WATER; 6) TO DETERMINE THE DEGREE OF SITE AMELIORATION RESULTING FROM THE SLUDGE APPLICATION BY MONITORING PHYSICAL AND CHEMICAL CHANGES OF THE SURFACE APOIL OR REFUSE MATERIAL; 7) TO EVALUATE THE EFFECT OF THE SLUDGE APPLICATION ON THE QUALITY OF THE GROUNDWATER AND/OR THE QUALITY OF THE NEAREST RECEIVING STREAM AND/OR SURFACE WATER RUNOFF BY A MONITORING PROGRAM. PROJECT DESCRIPTION: THE PROPOSED PROJECT CONTAINS THREE PHASES. PHASE I IS CONCERNED WITH THE PROCESSING OF SEWAGE SLUDGE AT THE SEWAGE TREATMENT PLANT AND ITS TRANSPORT TO AND DELIVERY AT THE STRIP MINE SITES. PHASE II CONCERNS THE APPLICATION OF THE SLUDGE TO THE LAND AND THE REVEGETATION MEASURES NECESSARY TO RETURN THE LAND TO PRODUCTIVE USE. PHASE III IS PROJECT EVALUATION.

**PROJECT: 02370-DEVELOPMENT OF CHRONOEPIDEMIOLOGIC METHODS WITH REFERENCE TO CARDIOPULMONARY CONDITIONS
STARTING/ COMPLETION DATE : 06/76 - 05/79 : FUNDING : ESTIMATED - FY78 / $ 40265
TASK CODE=H601C-7280 **EPA=R804512 ** (GRANT) PRIOR FY77 / $ 112427

EPA OFFICER.:	RJ HORTON	EPA/HERL - RTP	
INVESTIGATOR.:	F HALBERG	UNIV OF MINNESOTA	LAB MED DEPT
	A REINBERG	UNIV OF MINNESOTA	LAB MED DEPT
	E HALBERG	UNIV OF MINNESOTA	LAB MED DEPT
	L TONG	UNIV OF MINNESOTA	LAB MED DEPT
	G CORNELISSEN	UNIV OF MINNESOTA	LAB MED DEPT
	J LEE	UNIV OF MINNESOTA	LAB MED DEPT

MILESTONES...: 06/77 -PROGRESS REPORT
06/78 -PROGRESS REPORT
06/79 -FINAL REPORT

PLAN ID.....: (AP-601C)(DU-A105) REFINEMENT OF HEALTH INFORMATION ON AIR POLLUTANTS
MANDATE.....: 30-99 NOEPIDEMIOLOGY 0002

ORDIS CODES..:	RECN-002370	SSIE-GHA 2830 2	EPA -R804512	TASK-H601C-7280
	ORD -RH10830-3078	LABN-H601C-8280	MAND-30-99	
	AP -601C	DU -A105	LABT-HEE	

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH

ABSTRACT.....: OBJECTIVES: EXISTING DATA FROM SELECTED STUDIES OF CARDIOPULMONARY CONDITIONS (E.G., PANEL STUDIES OF AIR POLLUTION EFFECTS) WILL BE ANALYZED BY METHODS ACKNOWLEDGING THE EXISTENCE OF BIOLOGICAL AS WELL AS ENVIRONMENTAL PERIODICITIES. RECOMMENDATIONS WILL BE DEVELOPED FOR THE DESIGN AND ANALYSIS OF FUTURE EPIDEMIOLOGIC STUDIES SO THAT PREDICTABLE BIOLOGIC VARIABILITY (RHYTHMS AND TRENDS) CAN BE SEPARATED FROM EFFECTS OF ENVIRONMENTAL FACTORS. APPROACH AND PLANS: STATISTICAL METHODS (INCLUDING THE LEAST-SQUARES FITTING OF COSINE MODELS) WILL BE USED TO QUANTITATIVELY DEFINE CHARACTERISTICS OF RESOLVABLE RHYTHMS, PREFERABLY CIRCADIAN, ABOUT-WEEKLY (CIRCASEPTAN), CIRCANNUAL RHYTHMS AS WELL AS RHYTHMS WITH OTHER PERIODS IN CIRCULATORY AND RESPIRATORY FUNCTION OF HEALTHY SUBJECTS LIVING IN RELATIVELY POLLUTION-FREE ENVIRONMENTS. EXTENSIVE TIME SERIES (E.G., MEASUREMENTS OF HEART RATE, BLOOD PRESSURE AND PEAK EXPIRATORY FLOW 5 OR MORE TIMES DAILY FOR SEVERAL YEARS) ARE ALREADY AVAILABLE FOR THIS PURPOSE. MORBIDITY DATA (E.G., FROM APPROPRIATE PANEL STUDIES SPONSORED BY THE ENVIRONMENTAL PROTECTION AGENCY) WILL BE ANALYZED AGAINST THIS BACKGROUND, USING RHYTHMOMETRIC AND OTHER STATISTICAL PROCEDURES (E.G., CROSS SPECTRAL ANALYSIS). ON THE BASIS OF THIS EXPERIENCE, A FLOW CHART WILL BE DEVELOPED INTEGRATING OLD AND NEW COMPUTER PROGRAMS AND PROVIDING INDICATIONS FOR THE DESIGN AND ANALYSIS OF EPIDEMIOLOGIC TIME SERIES IN GENERAL. PRIMARY EMPHASIS WILL BE PLACED ON CHRONOEPIDEMIOLOGIC STUDIES PERMITTING THE INFERENTIAL STATISTICAL ISOLATION OF RHYTHMS. SUCH CHRONOEPIDEMIOLOGIC CRITERIA SHOULD BE PARTICULARLY PERTINENT AND SENSITIVE FOR AIR POLLUTION MONITORING WITH A VIEW OF HEALTH AND DISEASE.

**PROJECT: 03453-RESPONSE OF PLANTS TO AIR POLLUTION

STARTING/ COMPLETION DATE : 06/76 - 09/78 : FUNDING : ESTIMATED - FY78 / $ 30000
TASK CODE=M602A-007 **EPA=R804513-03 ** (GRANT) PRIOR FY77 / $ 166475

EPA OFFICER.: LC RANIERE EPA/ERL - CORVALLIS
INVESTIGATOR.: LH WEINSTEIN BOYCE THOMPSON PLANT RES
MILESTONES...: 09/78 -FINAL REPORT
PLAN ID.....: (AP-602A)(DU-A105) AIR POLLUTANT EFFECTS UPON TERRESTRIAL ECOSYSTEMS
MANDATE.....: 10-02 CLEAN AIR ACT
CURR. RESULTS: YIELDS OF BEANS & TOMATOES REDUCED BY AMBIENT OXIDA 0040
SULFUR DIOXIDE MAY LOWER ACCUM. OF FLUORIDE IN PLAN 0040
REPEATED EXPOSURE TO SIM ACIDIC RAIN CAUSES NECROTI 0040
LESIONS ON HERB. PLANTS 0040
ORDIS CODES..: RECN-003453 SSIE-GMA 2556 3 EPA -R804513-03 TASK-M602A-007
ORD -RM10830-1078 MAND-10-02 AP -602A
DU -A105 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVES: (1) TO DETERMINE WHETHER CONCURRENT EXPOSURE TO MIXTURES OF HYDROGEN FLUORIDE AND OZONE OR HYDROGEN FLUORIDE AND NITROGEN DIOXIDE PRODUCES INTERACTIVE EFFECTS (ANTAGONISM OR SYNERGISM) ON THE GROWTH, YIELD OR ACCUMULATION OF FLUORIDE BY VEGETATION; (2) TO PROVIDE QUANTITATIVE ESTIMATES OF THE EFFECTS OF AMBIENT OXIDANTS ON THE GROWTH, DEVELOPMENT AND YIELD OF ECONOMICALLY-IMPORTANT PLANTS; (3) TO PROVIDE QUANTITATIVE ESTIMATES OF THE EFFECTS OF AMBIENT RAINFALL AND SIMULATED ACIDIC RAIN ON THE GROWTH, DEVELOPMENT AND YIELD OF CROP PLANTS. APPROACHES: FIELD EXPOSURE CHAMBERS, GREENHOUSES AND CONTROLLED ENVIRONMENT CHAMBERS SPECIALLY DESIGNED FOR THESE STUDIES WILL BE USED TO EXPOSE VEGETATION TO CONTROLLED CONCENTRATIONS OF POLLUTANTS. DOSE-RESPONSE RELATIONSHIPS WILL BE DETERMINED TO PROVIDE A BASIS FOR THE DEVELOPMENT OF PREDICTIVE MODELS. PROGRESS: WE HAVE FOUND THAT (1) YIELDS OF BEANS AND TOMATOES ARE REDUCED BY AMBIENT OXIDANTS OCCURRING IN YONKERS, NEW YORK; (2) SULFUR DIOXIDE MAY LOWER OR HAVE NO EFFECT ON THE ACCUMULATION OF FLUORIDE IN PLANTS EXPOSED SIMULTANEOUSLY TO HYDROGEN FLUORIDE AND SULFUR DIOXIDE DEPENDING ON THE PLANT SPECIES AND POLLUTANT CONCENTRATIONS; AND (3) REPEATED EXPOSURE TO SIMULATED ACIDIC RAIN CAUSES NECROTIC LESIONS ON SUSCEPTIBLE HERBACEOUS PLANT SPECIES WHEN PH VALUES ARE LESS THAN 3.4 AND ON NEEDLES OF EASTERN WHITE PINE TREES WHEN PH VALUES ARE LESS THAN 2.6.

**PROJECT: 00654-DETERMINATION AND PREDICTION OF CHEMICAL FORMS OF TRACE METALS IN SEWAGE SLUDGES AND SLUDGE-AMENDED SOILS

STARTING/ COMPLETION DATE : 08/76 - 10/79 : FUNDING : ESTIMATED - FY78 / $ 103617
TASK CODE=C6118-7070 **EPA=R804516-03 ** (GRANT) PRIOR FY77 / $ 165122

EPA OFFICER,: JA RYAN EPA/MERL - CINC
INVESTIGATOR,: LJ LUND UNIV OF CALIFORNIA COLL OF NAT & AGRIC SCI
AL PAGE UNIV OF CALIFORNIA COLL OF NAT & AGRIC SCI
G SPOSITO UNIV OF CALIFORNIA COLL OF NAT & AGRIC SCI
MILESTONES...: 10/79 -PROJECT COMPLETE
11/79 -FINAL REPORT
PLAN ID.....: (AP-6118)(DU-B106) WASTEWATER TREATMENT TECHNOLOGY PROGRAMS
MANDATE.....: 30-99 WATER TREATMENT 0001
ORDIS CODES..: RECN-000654 SSIE-ZZ 751 EPA -R804516-03 TASK-C6118-7070
ORD -RC10C30-3078 MAND-30-99 AP -6118
DU -B106 LABT-ALN

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVE OF THE PROPOSED RESEARCH IS TO DEFINE THE CHEMICAL EQUILIBRIA BETWEEN TRACE METALS AND THE SOLUBLE AND INSOLUBLE ORGANIC AND INORGANIC FRACTIONS OF SEWAGE SLUDGES AND SLUDGE-AMENDED SOILS. THE RESEARCH INVOLVES THE DEVELOPMENT AND USE OF TECHNIQUES TO DETERMINE THE CHEMICAL FORMS OF TRACE METALS IN SEWAGE SLUDGES AND SEWAGE SLUDGE-AMENDED SOILS, THE IDENTIFICATION OF THE TYPES OF METAL-LIGAND COMPLEXES PRESENT, AND THE DETERMINATION OF STABILITY CONSTANTS FOR THE INORGANIC AND ORGANIC COMPLEXES IDENTIFIED. CADMIUM, ZINC, NICKEL, COPPER AND LEAD ARE THE TRACE METALS THAT WILL BE STUDIED IN THIS RESEARCH.

**PROJECT: 00530-VERIFICATION OF WATER QUALITY IMPACT RESULTING FROM COMBINED SEWER OVERFLOW USING REAL-TIME DATA
STARTING/ COMPLETION DATE : 08/76 - 12/78 : FUNDING : ESTIMATED - FY78 / $ 45460
TASK CODE=C611A-0005 **EPA=R804518-01 ** (GRANT) PRIOR FY77 / $ 132152

EPA OFFICER.: JN ENGLISH EPA/MERL - CINC
INVESTIGATOR.: TL MEINHOLZ MILWAUKEE METRO SEWER DIST
D MEILAND MILWAUKEE METRO SEWER DIST
MILESTONES...: 06/79 -FINAL REPORT PUBLISHED
PLAN ID.....: (AP-611A)(DU-B106) URBAN RUNOFF POLLUTION CONTROL
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
20-R05EPA REGION V
CURR. RESULTS: DETERMINATION THAT SIGNIF. OXYGEN DEMAND RESULTS FR 0012
RESUSPENSION OF SEDIMENTS DURING PERIODS OF SUBMERG 0012
OVERFLOWS SERVED AAS BASIS FOR VERIFYING WATER QUAL 0012
MODEL TO EVAL. EFF. OF ALTERNATIVE CONTROL METHODS. 0012
ORDIS CODES..: RECN-000530 SSIE-GMA 3052 2 EPA -R804518-01 TASK-C611A-0005
ORD -RC10830-5078 MAND-10-01 MAND-20-R05
AP -611A DU -B106 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVE/APPROACH: ACQUIRE REAL-TIME DATA FROM THE MILWAUKEE RIVER FOR THE DETERMINATION OF THE IMPACT OF COMBINED SEWERS ON WATER QUALITY AND THE ANALYSIS AND VERIFICATION OF THIS IMPACT USING WATER QUALITY MODELS. THE APPROACH OF THIS PROJECT WILL BE TO MONITOR THIS RIVER FROM THE ONSET OF AN OVERFLOW EVENT THROUGH THE RECOVERY OF WATER QUALITY THREE OR FOUR DAYS LATER. THE RIVER WILL BE MONITORED AT FOUR- OR SIX-HOUR INTERVALS DURING THIS TIME AT FIVE SEPARATE LOCATIONS. THE RESULTING DATA WILL BE COMPARED WITH HARPERS MULTI-PARAMETRIC MODEL WHICH SIMULATES THIS RIVER SYSTEM WITH SEWER AREA. VARIOUS MODIFICATIONS OF THE LOADINGS AND COEFFICIENTS IN HARPER'S MODEL WILL BE MADE TO EVALUATE THE RESULTING CHANGES IN WATER QUALITY. FINAL OUTPUT: - A FINAL REPORT CONTAINING THE ABOVE DESCRIBED INFORMATION. RESULTS TO DATE: - THE DETERMINATION THAT A SIGNIFICANT OXYGEN DEMAND RESULTS FROM RESUSPENSION OF THE SEDIMENTS DURING PERIODS OF SUBMERGED OVERFLOWS HAS SERVED AS A BASIS FOR VERIFYING A WATER QUALITY MODEL USED TO EVALUATE THE EFFECTS OF VARIOUS ALTERNATIVE CONTROL MEASURES FOR THE MUCH PUBLICIZED MILWAUKEE COMBINED SEWER OVERFLOW PROBLEM.

**PROJECT: 03280-THE SUSCEPTIBILITY OF METALS TO TREATMENT IN COMBINED INDUSTRIAL-MUNICIPAL SYSTEMS
STARTING/ COMPLETION DATE : 06/76 - 12/78 : FUNDING : ESTIMATED - FY78 / $ 50160
TASK CODE=L610F-52 **EPA=R804538-02 ** (GRANT) PRIOR FY77 / $ 224726

EPA OFFICER,:	IE SHORT	EPA/ERL - ADA		
INVESTIGATOR,:	JW PATTERSON	ILLINOIS INST OF TECH		ENG DEPT
	HE ALLEN	ILLINOIS INST OF TECH		ENG DEPT
	RD LETTERMAN	ILLINOIS INST OF TECH		ENG DEPT
	JJ GREEN	ILLINOIS INST OF TECH		ENG DEPT

MILESTONES...: 12/78 -REPORT ON METALS TREATMENT IN POTW'S
PLAN ID.....: (AP-610F)(DU-8118) COMBINED PROCESSES
MANDATE.....: 10-99 REATMENT EFFLUENT GUIDELINES 0033
ORDIS CODES..: RECN-003280 SSIE-ZZ 265 EPA -R804538-02 TASK-L610F-52
ORD -RL10C30-1078 MAND-10-99 AP -610F
DU -8118 LAST-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH

ABSTRACT.....: THE OBJECTIVE OF THIS PROJECT IS TO DEVELOP AN UNDERSTANDING OF THE MECHANISM OF METALS REMOVAL IN COMBINED INDUSTRIAL-MUNICIPAL SYSTEMS. BASICALLY, THE RESULTS OF THIS STUDY ARE TO CLARIFY THE RELATIONSHIP BETWEEN THE CHEMISTRY OF THE WASTEWATER AND THE EXTENT OF METALS REMOVAL. PREVIOUS STUDIES HAVE INDICATED THAT THE EXTENT OF METALS PASS-THROUGH IN POTW IS RELATED TO THE COMPLEXING/CHELATING MECHANISM ASSOCIATED WITH BOTH THE LIQUID AND SLUDGE PHASES OF RAW AND TREATED WASTEWATERS, INFLUENT METALS PRESENT, THEIR CONCENTRATION, OTHER INDUSTRIAL AND DOMESTIC WASTE CHARACTERISTICS, AND TYPE AND MODE OF OPERATION OF UNIT TREATMENT PROCESSES INVOLVED ALL INFLUENCE THE PASS-THROUGH OF METALS. THIS PROJECT WILL BE DEVOTED TO THE STUDY OF THE REMOVAL OF NINE METALS AT SUBTOXIC LEVELS: ALUMINUM, CADMIUM, CHROMIUM, COPPER, IRON, LEAD, NICKEL, AND ZINC. THE STUDY WILL CONSIST OF THREE PHASES: PHASE I WILL BE BATCH LABORATORY TESTS OF THE RELATIVE EFFECT OF VARIOUS PARAMETERS ON METALS UPTAKE WHICH CAN BE EVALUATED. SOME OF THE PARAMETERS FOR STUDY ARE HARDNESS, INORGANIC CONSTITUENTS, DETERGENTS CONTENT, SUSPENDED SOLIDS CONCENTRATION, BOD/TOC RATIO, PH, CYANIDES, AMMONIA, IRON ADDITIONS, AND ANAEROBIC DIGESTOR SUPERNATANT RETURN. THE RESULTS OF THE STUDY WILL BE USED TO PLAN MORE DETAILED STUDIES IN THE FOLLOWING PHASES. PHASE II STUDIES WILL USE A SERIES OF EIGHT 100 LITER CONTINUOUS FLOW PILOT PLANTS. FROM THESE RESULTS A "MODEL" WHICH WILL HAVE THE ABILITY TO PREDICT METALS REMOVAL WILL BE DEVELOPED. PHASE III WILL CONSIST OF THE STUDY OF METALS DISTRIBUTION IN FULL-SCALE TREATMENT SYSTEMS IN ORDER TO VERIFY THE ACCURACY OF THE PREDICTION

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
* OFFICE OF RESEARCH AND DEVELOPMENT *
LIST OF PROJECTS FROM MATCHED GRANT SYSTEM INPUT
* O R D I S D A T A E X T R A C T *

**PROJECT: 02659-TOXICOLOGY OF PESTICIDES

STARTING/ COMPLETION DATE : 07/76 - 07/80 : FUNDING : ESTIMATED - FY78 / $ 25000
TASK CODE=H615F-7627 **EPA=R804539 ** (GRANT) PRIOR FY77 / $ 100000

EPA OFFICER.: RL BARON EPA/HERL - RTP
INVESTIGATOR.: E REINER INST FOR MED RES/OCC HLTH MINERAL METABOLISM
MILESTONES...: 06/78 -OPHTHALMOLOGICAL DETERMINATION OF WORKERS
06/78 -PSYCHOMOTOR TESTING OF EXPOSED WORKERS
06/79 -SACCADE VELOCITY TESTING
06/79 -BODY BURDEN OF PESTICIDES
07/80 -FINAL REPORT
PLAN ID.....: (AP=615F)(DU=E105) MULTI-ROUTE EXPOSURES: HEALTH IMPLICATIONS OF PESTICIDES (SUBSTITUTE CHEMICALS)
MANDATE.....: 10-06 FEDERAL INSECTICIDE, FUNGICIDE AND RODENTICIDE AC
20-34 DAA FOR PESTICIDE PROGRAMS
CURR. RESULTS: PRELIM. SURVEY OF RESIDUES OF CHLOR. HYDRO. PESTICI 0010
HUMAN BLOOD COMPLETED IN PEOPLE LIVING IN TWO CONTI 0010
AND ONE MARITIME REGION OF YUGOSLAVIA. WORKERS EXP 0010
PESTICIDES SHOWED IMPAIRED PERFORMANCE. 0010
ORDIS CODES..: RECN-002659 SSIE-ZZ 658 EPA -R804539 TASK-H615F-7627
ORD -RH10C30-5078 LABN-H615F-8627 MAND-10-06
MAND-20-34 AP -615F DU -E105 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: A GAS CHROMATOGRAPHIC METHOD FOR THE DETERMINATION OF ORGANOPHOSPHORUS PESTICIDE RESIDUES IN HUMAN URINE HAS BEEN USED TO EXAMINE A GROUP OF WORKERS EXPOSED TO MALATHION AND PHOSALONE. IN A GROUP OF 30 WORKERS, UP TO ABOUT 3 PPM OF RESIDUES WAS FOUND IN URINE AT THE END OF A WORK DAY. A PRELIMINARY SURVEY OF RESIDUES OF CHLORINATED HYDROCARBON PESTICIDES IN HUMAN BLOOD HAS BEEN COMPLETED IN PEOPLE LIVING IN TWO CONTINENTAL AND ONE MARITIME REGION OF YUGOSLAVIA. IN ALL THREE REGIONS THE CONTENTS OF DDT, DDE, DDD, ALFA-HCH, LINDANE, ALDRIN AND DIELDRIN IN THE BLOOD OF THE GENERAL POPULATION WERE ABOUT THE SAME. IN TWO GROUPS OF WORKERS FROM TWO PESTICIDE PRODUCING PLANTS THE MEAN CONCENTRATIONS OF THE COMPOUNDS WERE HIGHER AND INDIVIDUAL RESULTS WERE SPREAD OVER A WIDER CONCENTRATION RANGE. THE MECHANISM OF INTERACTION OF ORGANOPHOSPHORUS COMPOUNDS WITH ENZYMES WAS STUDIED ON CHOLINESTERASES AND ARYLESTERASES. MEASUREMENTS OF CHOLINESTERASE ACTIVITIES IN HUMANS WERE ALSO USED AS A TEST FOR THE ABSORPTION OF ANTICHOLINESTERASE PESTICIDES. A TOTAL OF 187 INDIVIDUALS WAS UNDER OBSERVATION DURING THE YEAR. A FOLLOW-UP OF THE CHOLINESTERASE ACTIVITIES AFTER INHIBITION BY DDVP IN VIVO WAS USED TO CALCULATE THE RATE OF REGENERATION OF HUMAN PLASMA AND ERYTHROCYTE CHOLINESTERASE. THE CONCENTRATION OF VITAMIN A IN BLOOD OF 65 WORKERS EXPOSED TO PESTICIDES WAS DETERMINED TWICE IN THE SAME YEAR, AND WAS SHOWN TO BE SPREAD OVER THE SAME CONCENTRATION RANGE AS IN A GROUP OF 98 NON-EXPOSED SUBJECTS. IN CONJUNCTION WITH THESE STUDIES, OPTHALMOLOGICAL STUDIES IN A GROUP OF 16 WORKERS CHRONICALLY EXPOSED TO PESTICIDES HAVE BEEN CARRIED OUT AS A PART OF A SURVEY WHICH HAS BEEN UNDERWAY FOR SEVERAL YEARS. PSYCHOMOTOR PERFORMANCES HAVE BEEN TESTED IN A GROUP OF 48 WORKERS EXPOSED TO PESTICIDES AND IN 48 NON-EXPOSED INDIVIDUALS. IN ALL APPLIED TESTS THE WORKERS EXPOSED TO PESTICIDES SHOWED AN IMPAIRED PERFORMANCE.

**PROJECT: 02098-MEASUREMENT OF HALOGENATED POLLUTANTS AND OTHER TRACE GASES IN THE TROPOSPHERE IN SITU BY LONG-PATH INFRARED ABSORPTION SPECTRO

STARTING/ COMPLETION DATE : 03/77 - 06/79 : FUNDING : ESTIMATED - FY78 / $ 80000
TASK CODE=G7128-88-02 **EPA=R804546-03 ** (GRANT) PRIOR FY77 / $ 175000

EPA OFFICER,: P HENST EPA/ESRL - RTP
INVESTIGATOR,: JN PITTS UNIV OF CALIFORNIA AIR POLL RES CTR
AM WINER UNIV OF CALIFORNIA AIR POLL RES CTR
RA GRAHAM UNIV OF CALIFORNIA AIR POLL RES CTR
EC TUAZON UNIV OF CALIFORNIA AIR POLL RES CTR
MILESTONES...: 07/79 -FINAL REPORT
PLAN ID.....: (AP-7128)(DU-A130) CHAR, AND MEASUREMENT METHODS DEVELOPMENT (AIR)
ORDIS CODES..: RECN-002098 SSIE-GMA 2838 2 EPA -R804546-03 TASK-G7128-88-02
AP -7128 DU -A130 LABT-ALM
PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY- UNKN
ABSTRACT.....: A QUANTITATIVE CHARACTERIZATION OF AMBIENT PRIMARY AND SECONDARY TRACE POLLUTANT AS A FUNCTION OF TIME (BOTH DIURNALLY AND SEASONALLY) AND LOCATION (INCLUDING URBAN AREAS AND DOWNWIND RECEPTOR SITES) IS BEING CONDUCTED USING IN SITU, LONG-PATH, HIGH RESOLUTION FOURIER TRANSFORM INFRARED SPECTROSCOPY IN CONJUNCTION WITH CONVENTIONAL A STATE-OF-THE-ART ANALYTICAL METHODS FOR AMBIENT GAS PHASE AND PARTICULATE POLLUTANTS. RESULTS OF THE FIRST YEAR OF THIS PROGRAM AT RIVERSIDE INCLUDE THE FIRST POSITIVE IDENTIFICATION BY SPECTROSCOPIC TECHNIQUES OF FORMALDEHYDE AND NITRIC ACID IN AMBIENT PHOTOCHEMICAL SMOG, THE MEASUREMENT OF LOW LEVELS OF FORMIC ACID, AMMONIA AND A VARIETY OF HALOCARBONS, AND DETERMINATION OF UPPER LIMITS FOR THE POSSIBLE PRESENCE OF OTHER TRACE CONTAMINANTS. STUDIES WILL CONTINUE AT RIVERSIDE AND AT A MID-BASIN SITE, APPROXIMATELY FOUR TO SIX HOURS UPWIND OF RIVERSIDE, USING THE PART-PER-MILLION SENSITIVITY AFFORDED BY A KILOMETER OPTICAL PATHLENGTH MULTIPLE REFLECTION CELL, AND AN FTS-14 FOURIER TRANSFORM INFRARED SPECTROMETER (BOTH OF WHICH ARE THE PROPERTY OF THE EPA AND ARE ON LOAN TO SAPRC FOR THIS THREE-YEAR PROJECT). PORTABLE INSTRUMENTATION CURRENTLY EMPLOYED IN GAS PHASE AND PARTICULATE AMBIENT AIR MONITORING STUDIES AT SAPRC ARE OPERATED IN CONJUNCTION WITH THE LPIR DURING SELECTED SMOG EPISODES AT THE MONITORING LOCATIONS. THIS PROGRAM IS COORDINATED WITH AMBIENT AIR MONITORING STUDIES AT SAPRC SUPPORTED BY THE CALIFORNIA AIR RESOURCES BOARD AND THE DEVELOPMENT OF AN EXPERIMENTALLY VALIDATED MODEL FOR PHOTOCHEMICAL SMOG, FUNDED THROUGH NSF-RANN. EMPHASIS IS BEING PLACED ON THE QUANTITATIVE DETERMINATION OF PRODUCTS, LABILE INTERMEDIATES, AND PRIMARY POLLUTANTS FOR WHICH LITTLE, IF ANY, RELIABLE AMBIENT AIR DATA ARE CURRENTLY AVAILABLE. THESE NON-CRITERIA POLLUTANTS INCLUDE NITRIC ACID, NITROUS ACID, HALOCARBONS, HALOGENATED ACIDS, HYDROGEN PEROXIDE, NITROSAMINES, ALCOHOLS, EPOXIDES AND ORGANIC ACIDS, ALDEHYDES, AND OTHER CARBONYL COMPOUNDS. THESE ARE OF INTEREST PER SE, MAY BE TOXIC, AND ARE ALSO IMPORTANT FOR VALIDATING COMPUTERIZED KINETIC SMOG MODELS FOR CONTROL STRATEGIES.

**PROJECT: 00656-CHARACTERIZATION OF METAL COMPLEXES IN SEWAGE SLUDGE SYSTEMS

STARTING/ COMPLETION DATE : 08/76 - 08/79 : FUNDING : ESTIMATED - FY78 / $ 95369
TASK CODE=C6118-7071 **EPA=R804547-03 ** (GRANT) PRIOR FY77 / $ 102367

EPA OFFICER.: JA RYAN EPA/MERL - CINC
INVESTIGATOR.: LE SOMMERS PURDUE UNIV RESEARCH FOUNDATION
OW NELSON PURDUE UNIV RESEARCH FOUNDATION
MILESTONES...: 10/79 -FINAL REPORT PUBLISHED
PLAN ID.....: (AP-6118)(DU-8106) WASTEWATER TREATMENT TECHNOLOGY PROGRAMS
MANDATE.....: 30-99 WATER TREATMENT 0015
ORDIS CODES..: RECN-000656 SSIE-ZZ 399 EPA -R804547-03 TASK-C6118-7071
ORD -RC10C30-3078 LABN-C6118-0022 MAND-30-99
AP -6118 DU -8106 LABT-ALN

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVES OF THIS RESEARCH ARE TO CHARACTERIZE THE FORMS AND AMOUNTS OF CU, ZN, NI, CD AND PB IN SEWAGE SLUDGES AND TO DETERMINE THE FATE OF THESE METALS IN SOILS INCUBATED WITH SEWAGE SLUDGES. SPECIFIC OBJECTIVES ARE: 1) TO UTILIZE SOLUBILITY, CHROMATOGRAPHIC AND SPECTROSCOPIC TECHNIQUES FOR CHARACTERIZING THE CAPACITY OF AND MECHANISMS FOR METAL RETENTION IN SEWAGE SLUDGES; AND 2) TO ELUCIDATE THE TRANSFORMATIONS OF ORGANIC CARBON AND METALS ADDED TO SOILS IN SEWAGE SLUDGES; 3) TO DETERMINE THE DISTRIBUTION OF HEAVY METALS DURING THE PROCESSING OF CEREAL GRAINS. SEVERAL APPROACHES WILL BE EMPLOYED TO CHARACTERIZE THE FORMS OF METALS IN SEWAGE SLUDGES INCLUDING SOLVENT EXTRACTION, HEAVY LIQUID SEPARATION, HIGH PRESSURE LIQUID CHROMATOGRAPHY, AND SPECTROSCOPY (E.G., INFRARED, X-RAY). RETENTION OF METALS WILL BE STUDIED USING SEWAGE SLUDGES AND SYNTHETIC MODEL COMPOUNDS ANTICIPATED TO BE IMPORTANT IN METAL RETENTION BY SEWAGE SLUDGES (E.G., CALCIUM CARBONATE AND IRON OXIDES). THE TRANSFORMATIONS OF METALS AND ORGANIC CARBON ADDED TO SOILS IN SEWAGE SLUDGES WILL BE DETERMINED IN LABORATORY INCUBATION PROCEDURES. FRACTIONS OBTAINED BY HEAVY LIQUID SEPARATION WILL BE ADDED TO SOILS AND INCUBATED FOR VARYING PERIODS OF TIME TO EVALUATE THE RELATIVE IMPORTANCE OF SLUDGE INORGANIC AND ORGANIC COMPONENTS ON SLUDGE TRANSFORMATIONS. METAL RELEASE, CO2 EVOLUTION, AND N TRANSFORMATIONS WILL BE DETERMINED AT SELECTED TIME INTERVALS. ISOTOPICALLY EXCHANGEABLE ZN, CD, AND NI WILL BE EVALUATED AS A PROCEDURE TO MEASURE THE LABILE POOL OF HEAVY METALS IN SOILS. SAMPLES OF CORN, OATS, WHEAT, AND SOYBEANS SELECTED FROM FIELD PLOTS TREATED WITH VARYING LEVELS OF SLUDGE WILL BE SUBJECTED TO THE CONVENTIONAL PROCEDURES USED FOR PROCESSING CEREAL GRAIN IN ORDER TO EVALUATE THE DISTRIBUTION OF HEAVY METALS IN GRAIN PRODUCTS.

**PROJECT: 03848-MATHEMATICAL MODELS OF FATES OF POLLUTANTS IN ESTUARIES

STARTING/ COMPLETION DATE : 07/76 - 07/79 : FUNDING : ESTIMATED - FY78 / $ 140000
TASK CODE=Q608C-1-01 **EPA=R804563-03 ** (GRANT) PRIOR FY76 / $ 407300

EPA OFFICER,: TT DAVIES EPA/ERL -GULF BREEZE
INVESTIGATOR,: DJ OCONNOR MANHATTAN COLL ENV ENG & SCI DEPT
JS JERIS MANHATTAN COLL ENV ENG & SCI DEPT
WF MATYSTIK MANHATTAN COLL ENV ENG & SCI DEPT
KJ FARLEY MANHATTAN COLL ENV ENG & SCI DEPT
MILESTONES...: 07/79 -FINAL REPORT
PLAN ID.....: (AP-608C)(DU-B115) MARINE & ESTUARINE ECOLOGICAL PROCESSESS & EFFECTS (IBA 608)
ORDIS CODES..: RECN-003848 SSIE-GMA 3246 2 EPA -R804563-03 TASK-Q608C-1-01
AP -608C DU -B115 LABT-HEE
PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY- UNKN
ABSTRACT.....: OBJECTIVES: THE QUANTIFICATION OF THE INTER-RELATIONSHIPS AMONG PHYSICAL, CHEMICAL, AND BIOLOGICAL VARIABLES OF ESTUARINE SYSTEMS, INCLUDING ANALYSIS OF TWO-LAYERED ESTUARINE TRANSPORT, EFFECTS ON SUSPENDED SOLIDS AND SALINITY, ADSORPTION/DESORPTION MECHANISMS FOR HAZARDOUS SUBSTANCES, AND FOOD CHAIN IMPLICATIONS. APPROACH: THE DEVELOPMENT OF A MATHEMATICAL MODEL CHARACTERIZING ESTUARINE TRANSPORT, VERIFYING THIS MODEL USING FIELD DATA FOR VELOCITY PROFILES AND SALINITY AND SOLIDS DISTRIBUTION. CURRENT PLANS/PROGRESS: A MODEL DESCRIBING ESTUARINE TRANSPORT HAS BEEN DEVELOPED. SPECIFIC APPLICATION WILL BE MADE TO THE JAMES RIVER ESTUARY IN ORDER TO ADDRESS KEPONE CONTAMINATION PROBLEMS.

**PROJECT: 00294-SULFIDE PRECIPITATION TO TREAT NON-FERROUS METAL PRODUCTION WASTES

STARTING/ COMPLETION DATE : 10/77 - 10/79 : FUNDING : ESTIMATED - FY78 / $ 48000
TASK CODE=B610C-171 **EPA=R804568-02 ** (GRANT) PRIOR FY77 / $ 53000

EPA OFFICER,: HB DURHAM EPA/IERL - CINC
INVESTIGATOR,: RB GRIEVES UNIV OF KENTUCKY CHEM ENG DEPT
D BHATTACHARYY UNIV OF KENTUCKY CHEM ENG DEPT
MILESTONES...: 03/78 -INTERIM REPORT
08/78 -GRANT AMMENDMENT PACKAGE SUBMITTED
07/79 -DRAFT FINAL REPORT DUE
10/79 -FINAL REPORT DUE
PLAN ID.....: (AP-610C)(DU-B118) MATERIALS PRODUCTION, INDUSTRIAL PT. SOURCES (WATER)
MANDATE.....: 20-14 DAA FOR SOLID WASTE
ORDIS CODES..: RECN-000294 SSIE-GMA 3072 2 EPA -R804568-02 TASK-B610C-171
ORD -RB10B30-2078 MAND-20-14 AP -610C
DU -B118 LABT-EMI

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OVERALL OBJECTIVES OF THIS CONTINUATION PROJECT IS TO EXTEND THE APPLICATION OF THE LIME-SULFIDE COMBINATION PROCESS TO INCLUDE TREATMENT OF SCRUBBER WASTEWATERS (FROM COPPER SMELTING OPERATION) CONTAINING VERY HIGH ARSENIC AND COPPER, AND MODERATE CONCENTRATIONS OF CD, ZN, FE, PB, ETC. THE EXPERIMENTAL STUDY WILL ALSO INCLUDE SELECTIVE METAL (CU AND ZN) RECOVERY FROM THE PRECIPITATED SLUDGE. CURRENT STUDIES WITH THE SULFIDE PROCESS SHOW VERY PROMISING HEAVY METALS SEPARATION IN TERMS OF MEETING EFFLUENT DISCHARGE STANDARDS. CONTINUOUS-FLOW, COMBINATION LIME-SULFIDE PRECIPITATION STUDIES WILL INCLUDE SCRUBBER WATERS GENERATED FROM NORANDA CONTINUOUS SMELTING PROCESS AND FROM ELECTRIC SMELTING OPERATION. FOR WASTEWATERS CONTAINING LOW FE/AS, THE USE OF PARTIAL SLUDGE RECYCLE, ADDITION OF FERRIC SALT, AND PRECIPITATION WITH FES PLUS NA2S, WILL BE STUDIED TO ENHANCE ARSENIC SEPARATION. BOTH BATCH AND CONTINUOUS EXPERIMENTS WILL BE USED TO STUDY METAL RECOVERY FROM THE SLUDGE.

**PROJECT: 00812-GRANULAR ACTIVATED CARBON STUDIES

STARTING/ COMPLETION DATE : 08/76 - 01/80 : FUNDING : ESTIMATED - FY78 / $ 164338
TASK CODE=C614A-7151 **EPA=R804571-01 ** (GRANT) PRIOR FY77 / $ 603064

EPA OFFICER,: J DEMARCO EPA/MERL - CINC
INVESTIGATOR,: NV BRODTMANN JEFFERSON WATER DEPT
DB GREENBERG JEFFERSON WATER DEPT
LR COLLINS JEFFERSON WATER DEPT
JP RYAN GULF SOUTH RESEARCH INST
MILESTONES...: 10/77 -INTERIM REPORT PUBLISHED
10/78 -INTERIM REPORT PUBLISHED
05/80 -FINAL REPORT PUBLISHED
PLAN ID.....: (AP=614A)(DU=C110) WATER SUPPLY - WATER TREATMENT & SYSTEMS 0018
MANDATE.....: 10-99 WR)
ORDIS CODES..: RECN-000812 SSIE-GMA 3073 2 EPA -R804571-01 TASK-C614A-7151
ORD -RC10B30-1078 MAND-10-99 AP -614A
DU -C110 LABT-ALN
PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: BECAUSE OF GROWING PUBLIC CONCERN OVER THE OCCURRENCE OF TRACE AMOUNTS OF VARIOUS ORGANIC CHEMICALS IN THE AREA POTABLE WATER SUPPLY, THE JEFFERSON PARISH WATER DEPARTMENT HAS RECOGNIZED THE NEED FOR A MORE EFFICIENT AND RELIABLE TREATMENT PROCESS DESIGNED TO REMOVE SUCH CONTAMINANTS. THE MISSISSIPPI RIVER IS THE SOLE RAW WATER SOURCE AVAILABLE TO THE JEFFERSON PARISH WATER SYSTEM. THEREFORE, SINCE THE USE OF ANOTHER LESS POLLUTED SOURCE IS IMPOSSIBLE, THE DEPARTMENT IS FACED ONLY WITH SEEKING OUT NEW METHODS FOR REMOVAL OF TRACE LEVELS OF ORGANIC CONTAMINANTS. ONE SUCH METHOD OFFERS THE MOST PROMISE OF EFFECTING TRACE ORGANIC COMPOUND REMOVAL. IT IS THE USE OF GRANULAR ACTIVATED CARBON (GAC) FILTRATION. GAC FILTRATION WILL BE THOROUGHLY STUDIED IN QUANTITATIVE TERMS AND IN TERMS OF COST EFFECTIVENESS DURING TH

**PROJECT: 03624-DOCUMENTATION OF SELECTED CONDITIONS BEFORE/AFTER RESTORATIVE DREDGING

STARTING/ COMPLETION DATE : 07/76 - 12/79 : FUNDING : ESTIMATED - FY78 / $ 34925
TASK CODE=M646A-205 **EPA=R804572-01 ** (GRANT) PRIOR FY77 / $ 59577

EPA OFFICER,: FS STAY EPA/ERL - CORVALLIS
INVESTIGATOR,: CJ GEORGE UNION COLLEGE GRADUATE SCH
MILESTONES...: 12/79 -FINAL REPORT
PLAN ID.....: (AP=646A)(DU=) PROGRAM ELEMENT 646A 0044
FINAL OUTPUT,: REPORT ON VALUE OF DREDGING AS RESTORATIVE TECHNIQU
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-003624 SSIE-GMA 5037 EPA -R804572-01 TASK-M646A-205
ORD -RM10R10-1078 MAND-10-01 AP -646A
PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVE: THIS PROJECT WILL COLLECT AND EVALUATE LIMNOLOGICAL DATA FOR COLLINS LAKE WHICH WILL REPRESENT THE EFFECT OF DREDING AND RELATED LAKE RESTORATION ACTIVITIES. THIS WILL BE ACCOMPLISHED THROUGH ANALYSIS OF CHANGES IN PHYSICAL AND CHEMICAL PARAMETERS AS WELL AS CHANGES IN MAJOR BIOLOGICAL GROUPS SUCH AS PHYTOPLANKTON, ZOOPLANKTON, MACROPHYTES AND FISH. FINAL OUTPUT: A REPORT ON THE VALUE OF DREDGING AS A RESTORATIVE TECHNIQUE.

**PROJECT: 03689-IMPACT OF ZOOPLANKTON GRAZING UPON PHYTOPLANKTON IN EUTROPHIC SAGINAW BAY AND WESTERN LAKE ERIE
STARTING/ COMPLETION DATE : 05/76 - 05/79 : FUNDING : ESTIMATED - FY78 / $ 78600
TASK CODE=N608A-022 **EPA=R804573-02 ** (GRANT) PRIOR FY77 / $ 153600

EPA OFFICER.: NA THOMAS EPA/ERL - DULUTH
INVESTIGATOR.: DC MCNAUGHT STATE UNIV OF NEW YORK ARTS & SCI/BIOL SCI
MILESTONES...: 05/79 -FINAL REPORT: PHYTOPLANKTON GRAZING/POLL. TRANSPORT IN THE ECOSY S
PLAN ID.....: (AP=608A)(DU=8115) FRESHWATER ECOLOGICAL PROCESSESS & EFFECTS
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN=003689 SSIE-GMA 2555 3 EPA =R804573-02 TASK=N608A-022
ORD =RN10830-1078 LABN=N769 -022 MAND=10-01
AP =608A DU =8115 LABT=MEF

PROJ STATUS..: PROJECT=ACTIVE DATA=ORIGINAL CATEGORY=RESEARCH
ABSTRACT.....: OBJECTIVE: TO ESTIMATE GRAZING OF PHYTOPLANKTON BY ZOOPLANKTON BOTH BY SPECIES AND IN TOTAL, TO ESTIMATE SIZE SELECTIVE GRAZING, ESTIMATE TOTAL GRAZING FOR ROTIFERS, AND TO INVESTIGATE CONTROL OF BLUE-GREEN ALGAE BY GRAZING. TO ESTIMATE THE TRANSFER OF SELECT TOXIC SUBSTANCES FROM PHYTOPLANKTON TO ZOOPLANKTON, THE ABILITY OF THE HERBIVOROUS ZOOPLANKTON TO REGULATE ALGAL PRODUCTIVITY IN HIGHLY EUTROPHIC SAGINAW BAY (LAKE HURON) AND WESTERN LAKE ERIE WILL BE DETERMINED, TOTAL GRAZING, AS WELL AS SIZE-SELECTIVE FEEDING ON SMALL FLAGELLATES AS WELL AS LARGE DIATOMS AND BLUE-GREEN ALGAE WILL BE MEASURED IN THE FIELD. THIS INFORMATION ON IMPORTANT CARBON FLUXES IS VITAL TO THE MODELING TEAM RESPONSIBLE FOR THE ULTIMATE SYNTHESIS OF DATA ON GREAT LAKES ECOSYSTEMS. FIELD STUDIES OF GRAZING WILL DEPEND ON 14C TAGGING TECHNIQUES. IN THE LABORATORY THE FEEDING HABITS OF ROTIFERS, OFTEN IGNORED, WILL BE INVESTIGATED USING NEW PARTICLE COUNTING TECHNIQUES COMBINED WITH COMPUTER ANALYSIS. ALL OF THESE INVESTIGATIONS WILL BE BASED ON PROGRESS MADE BY AN EXPERIMENTAL TEAM DURING THE UPPER LAKES REFERENCE STUDY. RESULTS ALREADY SHOW THAT THE CRUSTACEANS CONTROL ALGAL PRODUCTION IN OPEN LAKE ONLY DURING THE FALL MONTHS. BIOLOGICAL CONTROL OF THE GROWTH OF BLUE-GREEN ALGAE FAILED TO DEVELOP IN MID-SUMMER. DISCOVERY OF THE DEGREE OF BIOLOGICAL CONTROL IN THE MOST EUTROPHIC AREAS OF THE GREAT LAKES IS VITAL TO UNDERSTANDING THE FUNCTIONING OF THESE ECOSYSTEMS, ULTIMATELY PRODUCING VALIDATED SIMULATION MODELS FOR THEM, AND FINALLY MANAGING ALGAL BLOOM PROBLEMS.

**PROJECT: 02324-EFFECTS OF ETIOLOGICALLY DEFINED RESPIRATORY INFECTIONS ON LUNG FUNCTION
AND ITS GROWTH IN AN AREA OF LOW POLLUTION
STARTING/ COMPLETION DATE : 08/76 - 07/79 : FUNDING : ESTIMATED - FY78 / $ 175000
TASK CODE=H601C-7221 **EPA=R804577 ** (GRANT) PRIOR FY77 / $ 417000

EPA OFFICER,: BT KETCHAM EPA/HERL - RTP
INVESTIGATOR,: A COLLIER UNIV OF NORTH CAROLINA SCH OF MED/PATH DEPT
MILESTONES,..: 06/78 -INITIATE FORCED OSCILLATION TECHNIQUE ON CHILDREN
03/78 -DEVELOPMENT OF ASSAY FOR RSV
09/78 -DEVELOPMENT OF ASSAY FOR MYCOPLASMA PNEUMONIAE
PLAN ID,.....: (AP=601C)(DU=A105) REFINEMENT OF HEALTH INFORMATION ON AIR POLLUTANTS
FINAL OUTPUT,: DESIGN OF BETTER STUDIES TO ASSESS GROWTH OF LUNG 0011
FUNCTION AND IMPACT OF RESPIRATORY INFECTIONS ON 0011
YOUNG CHILDREN LIVING IN AREAS OF HIGH POLLUTION. 0011

MANDATE,.....: 10-02 CLEAN AIR ACT
ORDIS CODES,.: RECN-002324 SSIE-ZZ 694 EPA -R804577 TASK-H601C-7221
ORD -RH10C30-1078 LABN-H601C-8221 MAND-10-02
AP -601C DU -A105 LABT-HEE

PROJ STATUS,.: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT,....: OBJECTIVE: THE OBJECTIVE OF THIS STUDY IS TO PROVIDE BASELINE PULMONARY FUNCTION DATA ON CHILDREN LIVING AND GROWING IN AREA OF LOW ENVIRONMENTAL POLLUTION. APPROACH: CHILDREN WILL BE STUDIED LONGITUDINALLY TO CHARACTERIZE PULMONARY FUNCTION CHANGES ASSOCIATED WITH PHYSICAL GROWTH AND DOCUMENTED UPPER RESPIRATORY INFECTIONS. CHILDREN WILL BE CULTURED FOR PATHOGENS AT TWO WEEK INTERVALS REGARDLESS OF SYMPTOMATOLOGY AND MEASUREMENTS MADE WILL ASSESS THE IMPACT OF THESE INFECTIOUS AGENTS ON PULMONARY FUNCTION. OUTPUT: THIS INFORMATION WILL ENABLE THE DESIGN OF BETTER STUDIES TO ASSESS THE GROWTH OF LUNG FUNCTION AND IMPACT OF RESPIRATORY INFECTIONS ON YOUNG CHILDREN LIVING IN AREAS OF HIGHER AIR POLLUTION.

**PROJECT: 00179-INVESTIGATION OF NEW TECHNIQUES FOR CONTROL OF SMELTER ARSENIC BEARING WASTES

STARTING/ COMPLETION DATE : 01/77 - 09/78 : FUNDING : ESTIMATED - FY78 / $ 59000
TASK CODE=B604C-161 **EPA=R804595-02 ** (GRANT) PRIOR FY77 / $ 350000

EPA OFFICER,:	JO BURCKLE	EPA/IERL - CINC	
INVESTIGATOR,:	A MEHTA	MONTANA TECH ALUMNI FOUND	MINERAL RES CNTR
	G ZUCKER	MONTANA TECH ALUMNI FOUND	MINERAL RES CNTR
	L TWIDWELL	MONTANA TECH ALUMNI FOUND	MINERAL RES CNTR
	F DIEBOLD	MONTANA TECH ALUMNI FOUND	MINERAL RES CNTR
	R MCCLINCY	ANACONDA CO	

MILESTONES...: 10/78 -FINAL REPORT RECEIVED
PLAN ID.....: (AP-604C)(DU-A128) MATERIALS PRODUCTION, INDUSTRIAL PT. SOURCES (AIR)
MANDATE.....: 30-99 OLOGY 0005
10-02 CLEAN AIR ACT
20-23 DAA FOR AIR QUALITY PLANNING AND STANDARDS
CURR. RESULTS: LITERATURE SEARCH, REPORT ON GEOCHEM,, CHEM AND MET 0005
OF ARSENIC PREPARED. LAB FEAS. STUDIES CONDUCTED, 0005
PLANT STUDIES COMPLETED. 0005

ORDIS CODES..:	RECN-000179	SSIE-ZZ 431	EPA -R804595-02	TASK-B604C-161
	MAND-30-99	ORD -R810C30-5078	MAND-10-02	
	MAND-20-23	AP -604C	DU -A128	LABT-EMI

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH

ABSTRACT.....: IN JUNE, 1976 THE U.S. ENVIRONMENTAL PROTECTION AGENCY AWARDED A RESEARCH GRANT TO THE MINERAL RESEARCH CENTER TO CARRY OUT A RESEARCH INVESTIGATION OF NEW TECHNIQUES FOR CONTROL OF SMELTER ARSENIC FLUE DUST WASTES. THE MINERAL RESEARCH CENTER IS STUDYING FIXATION OF ARSENIC FLUE DUST WASTES BY VARIOUS TECHNIQUES SUCH AS ARSENIC FIXATION BY MOLTEN WASTE SLAGS FROM DIFFERENT SMELTING OPERATIONS, FIXATION AT HIGH TEMPERATURES BY CLAYS, SOME INDUSTRIAL BY-PRODUCTS, AND PHOSPHATE ROCK, FIXATION BY CEMENT AND CONCRETE MIXTURES, AND FIXATION OF ARSENIC AT LOW TEMPERATURES BY CLAYS, PHOSPHATE ROCK, AND SOME INDUSTRIAL BY-PRODUCTS. INITIAL RESULTS OF ARSENIC INCORPORATION IN THESE MEDIA AND THE LEACH TEST RESULTS ARE ENCOURAGING. UNDER SUBCONTRACT, THE ANACONDA COMPANY RESEARCH LABORATORY IN TUCSON IS STUDYING THE EXTRACTION OF ARSENIC, BY CHEMICAL LEACHING, FROM THE FLUTE DUST WASTES AND HAS RECENTLY STARTED TESTS ON FIXATION OF EXTRACTED ARSENIC IN AQUEOUS MEDIA. FIRST YEAR: A LITERATURE SEARCH AND REPORT ON THE GEOCHEMISTRY, CHEMISTRY, AND METALLURGY OF ARSENIC WAS PREPARED TO PROVIDE GUIDANCE FOR THE LABORATORY STUDIES. LABORATORY FEASIBILITY STUDIES HAVE BEEN CONDUCTED TO SCREEN THE EFFECTIVENESS OF SELECTED FIXATION TECHNIQUES. PILOT PLANT STUDIES OF THE REMOVAL OF ARSENIC FROM FLUE DUST WASTES BY CHEMICAL LEACHING WERE ESSENTIALLY COMPLETED. SECOND YEAR: LEACHING TESTS OF THE "FIXED" PRODUCTS RESULTING FROM SEVERAL FIXATION TECHNIQUES WILL BE PERFORMED TO DETERMINE RESISTANCE TO LEACHING UNDER ENVIRONMENTAL CONDITIONS. STUDIES OF SEPARATION BY CHEMICAL LEACHING AND SUBSEQUENT FIXATION WILL BE COMPLETED.

**PROJECT: 02235-RESEARCH ON AIR SAMPLING FILTER MEDIA

STARTING/ COMPLETION DATE : 09/76 - 09/79 : FUNDING : ESTIMATED - FY78 / $ 25000
TASK CODE=G7128-BE-37 **EPA=R804600-02 ** (GRANT) PRIOR FY77 / $ 100000

EPA OFFICER.: T DZUBAY EPA/ESRL - RTP
INVESTIGATOR.: BY LIU UNIV OF MINNESOTA DEPT OF MECH ENG
MILESTONES...: 02/80 -FINAL REPORT
PLAN ID.....: (AP-7128)(DU-A130) CHAR, AND MEASUREMENT METHODS DEVELOPMENT (AIR)
MANDATE.....: 10-02 CLEAN AIR ACT
ORDIS CODES..: RECN-002235 SSIE-GMA 3255 2 EPA -R804600-02 TASK-G7128-BE-37
ORD -RG10851-1078 LABN-G7128-BB-45 MAND-10-02
AP -7128 DU -A130 LABT-ALM

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
COMMENT.....: SPLIT FUNDING G7128-BB-45 AND G6018-CA-24 0045
ABSTRACT.....: THE PRIMARY OBJECTIVE OF THIS PROGRAM IS TO STUDY AIR SAMPLING FILTER MEDIA AND TO EVALUATE THE AVAILABLE COMMERCIAL FILTER MEDIA IN TERMS OF THEIR SAMPLING EFFICIENCY, RESISTANCE TO FLOW, DUST HOLDING CAPACITIES, MOISTURE RETENTION CHARACTERISTICS, AND OTHER PHYSICAL PROPERTIES OF INTEREST. ALL MAJOR COMMERCIAL FILTER MEDIA WILL BE STUDIED. THE END RESULT OF THE PROJECT WILL BE THE PREPARATION OF A "FILTER HANDBOOK" IN WHICH THE MAJOR FILTER CHARACTERISTICS ARE DESCRIBED. IN ADDITION, A CONCURRENT STUDY WILL BE UNDERTAKEN TO RELATE THE SAMPLING EFFICIENCY AND FLOW RESISTANCE OF FILTERS TO THOSE PREDICTED BY THEORY. ALSO, THE "SERIES FILTER" METHOD WILL BE STUDIED AS A POSSIBLE ALTERNATIVE TO THE DICHOTOMOUS SAMPLER FOR SEPARATING ATMOSPHERIC PARTICLES INTO A FINE AND A COARSE FRACTION WITH A CUT POINT NEAR 2.0 MIC

**PROJECT: 03377-MECHANISM AND CONTROL OF RAINFALL RUNOFF IMPACT FROM LAND APPLICATION SITES

STARTING/ COMPLETION DATE : 07/76 - 07/79 : FUNDING : ESTIMATED - FY78 / $ 7631
TASK CODE=L617D-24 **EPA=R804608 ** (GRANT) PRIOR FY77 / $ 69171

EPA OFFICER,: SC YIN EPA/ERL - ADA
INVESTIGATOR,: PW WESTERMAN UNIV OF NORTH CAROLINA BIOL/AGRIC ENG
MR OVERCASH UNIV OF NORTH CAROLINA BIOL/AGRIC ENG
JC BARKER UNIV OF NORTH CAROLINA BIOL/AGRIC ENG
FJ HUMENIK UNIV OF NORTH CAROLINA BIOL/AGRIC ENG
MILESTONES...: 07/79 -FINAL REPORT READY FOR PRINTING
PLAN ID.....: (AP-617D)(DU-) ANIMAL PRODUCTION
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-003377 SSIE-GMA 3064 2 EPA -R804608 TASK-L617D-24
ORD -RL10830-1078 LABN-L770D-116 MAND-10-01
AP -617D LABT-ALN

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE FOUR MAIN OBJECTIVES EVALUATE RAINFALL RUNOFF FROM PLOTS WHERE ANIMAL MANURE OR LAGOON EFFLUENT HAS BEEN APPLIED. THE OBJECTIVES ARE: 1. TO DETERMINE THE LONG-TERM (5-YEAR) CROP UPTAKE, SOIL ACCUMULATION, AND WATER-CARRIED MASS MOVEMENT FROM LAND APPLICATION PLOTS SPRINKLER IRRIGATED WITH SWINE LAGOON EFFLUENT; TWO SOIL-CROP SYSTEMS ARE BEING STUDIED. 2. TO DETERMINE THE IMPACT OF SWINE DRYLOT RUNOFF ON STREAM QUALITY IN THE COASTAL PLAIN. 3. TO DETERMINE THE QUANTITY AND QUALITY OF SUBSURFACE FLOW FROM SPRINKLER IRRIGATED PLOTS HAVING A PERMEABLE SURFACE LAYER AND A LOW-PERMEABILITY LAYER BEGINNING AT 25-50 CM. 4. TO DETERMINE THE EFFECTIVENESS OF VARIOUS LENGTHS OF GRASSED BUFFER ZONES IN REDUCING MASS AND CONCENTRATION IN RUNOFF FROM LAND APPLICATION PLOTS. THE RESEARCH APPROACH FOR THE SWINE DRYLOT STUDY IS TO USE AN ACTUAL PRODUCER SITE AND MONITOR STREAM QUALITY. THE OTHER THREE RESEARCH OBJECTIVES INVOLVE VARIOUS APPLICATION RATES AND BUFFER ZONE LENGTHS FOR SMALL PLOTS. PROJECT IS ON SCHEDULE WITH DATA COLLECTIONS TO BE COMPLETED BY JANUARY 1979.

**PROJECT: 01089-MAN'S EXPOSURE TO HALOGENATED ORGANICS FROM HIS DRINKING WATER

STARTING/ COMPLETION DATE : 09/78 - 09/79 : FUNDING : ESTIMATED - FY78 / $ 213513
TASK CODE=D614 -026 **EPA=R804611-03 ** (GRANT) PRIOR FY77 / $ 367557

EPA OFFICER.: KP CANTOR EPA/HERL - CINC
INVESTIGATOR.: HF ENOS UNIV OF MIAMI EPIDEM/PUB HLTH DEPT
JE DAVIES UNIV OF MIAMI EPIDEM/PUB HLTH DEPT
CD PFAFFENBERGE UNIV OF MIAMI EPIDEM/PUB HLTH DEPT
A PEOPLES UNIV OF MIAMI EPIDEM/PUB HLTH DEPT
J FREAL UNIV OF MIAMI EPIDEM/PUB HLTH DEPT
MILESTONES...: 03/79 -REPORT ON HUMAN BODY BURDENS OF TRIHALOMETHANES
09/79 -CONTRIBUTION FROM DRINKING WATER
PLAN ID.....: (AP-614)(DU-C110) PUBLIC SECTOR ACTIVITIES- WATER SUPPLY
MANDATE.....: 30-99 BURDENS 0003
CURR. RESULTS: METHODOLOGY FOR DETERM. THM'S IN BLOOD & FAT 0003
HAS BEEN DEV. EXTENSIVE ANIMAL EXP. IN FINAL PHASE. 0003
ORDIS CODES..: RECN-001089 SSIE-ZZ 727 EPA -R804611-03 TASK-D614 -026
ORD -RD10C30-3078 MAND-30-99 AP -614
DU -C110 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVES: THE OBJECTIVES OF THIS INVESTIGATION ARE TO DEVELOP A METHOD FOR DETERMINING TRIHALOMETHANE (THM) AND RELATED COMPOUNDS IN HUMAN BLOOD AND ADIPOSE TISSUE AND TO APPLY THE METHOD IN AN EPIDEMIOLOGICAL STUDY DESIGNED TO DETERMINE WHETHER A RELATIONSHIP EXISTS BETWEEN THE CONCENTRATION OF THM'S IN BLOOD AND THEIR CONCENTRATION IN DRINKING WATER. APPROACH: THE METHOD DEVELOPMENT PROGRAM FOR THM'S IS FOLLOWED BY ANIMAL EXPERIMENTS DESIGNED TO IMPROVE INSIGHT INTO THE STORAGE, METABOLISM AND DISTRIBUTION OF THM'S IN MAMMALIAN TISSUE. THE FINAL PHASE OF THE STUDY INVOLVES HUMAN SUBJECTS IN AN EPIDEMIOLOGICAL INVESTIGATION TO DETERMINE THE RELATIONSHIP BETWEEN BLOOD LEVELS OF THM'S AND THEIR CONCENTRATION IN DRINKING WATER. CURRENT PLANS AND/OR PROGRESS: THE METHODOLOGY FOR DETERMINING THM'S IN BLOOD AND FAT HAS BEEN DEVELOPED. AN EXTENSIVE ANIMAL EXPERIMENT IS IN ITS FINAL PHASE. THE WORK PLANS FOR THE EPIDEMIOLOGICAL STUDY HAVE BEEN FINALIZED.

**PROJECT: 03675-LIMNOLOGICAL INVESTIGATIONS OF WATER QUALITY AND FISH LARVAE IN LAKE ERIE

STARTING/ COMPLETION DATE : 04/76 - 05/79 : FUNDING : ESTIMATED - FY78 / $ 113600
TASK CODE=N608A-006 **EPA=R804612-03 ** (GRANT) PRIOR FY77 / $ 260500

EPA OFFICER.: NA THOMAS EPA/ERL - DULUTH
INVESTIGATOR.: CE HERDENDORF OHIO STATE UNIV/RES FOUND BIOL SCI
KM BEDFORD OHIO STATE UNIV/RES FOUND BIOL SCI
MILESTONES...: 08/79 -FINAL REPORT: IMPACT OF POWER PLANTS ON LAKE ERIE FISH LARVAE
PLAN ID.....: (AP-608A)(DU-8115) FRESHWATER ECOLOGICAL PROCESSESS & EFFECTS
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-003675 SSIE-GMA 2824 2 EPA -R804612-03 TASK-N608A-006
ORD -RN10830-1078 LABN-N769 -006 MAND-10-01
AP -608A DU -8115 LABT-MEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OHIO STATE UNIVERSITY, CENTER FOR LAKE ERIE AREA RESEARCH (CLEAR) PROPOSED TO CONTINUE INVESTIGATIONS OF LAKE ERIE WATER QUALITY AND FISH LARVAE. THE WATER QUALITY STUDIES WILL EMPHASIZE THE IMPORTANCE OF SEDIMENT-WATER INTERACTIONS AND THEIR INFLUENCE ON WATER QUALITY AND BIOLOGICAL COMMUNITIES IN LAKE ERIE. LARVAL FISH INVESTIGATIONS WILL BE CONCENTRATED IN AREAS OF HIGHEST DENSITIES IN AN ATTEMPT TO MORE PRECISELY DEFINE THE PRESENT AND POTENTIAL IMPACT OF ELECTRIC POWER GENERATION ON THESE POPULATIONS. EFFORTS TO MODEL THE MORTALITY TO KEY FISH SPECIES WILL BE CONTINUED. THE GENERAL OBJECTIVES OF THE PROPOSED WORK INCLUDE: 1. DETERMINING OXYGEN DEMAND AND NUTRIENT REGENERATION IN THE SEDIMENT/WATER INTERFACE ZONE, 2. DETERMINING HYPOLIMNION FLUX AND RESPIRATION RATES, 3. INVESTIGATING SEDIMENT-WATER-BIOMASS INTERACTIONS OF TOXIC METALS, 4. MONITORING TOXIC METALS IN SEDIMENTS AT DREDGE DISPOSAL SITES SERVING ASHTABULA HARBOR, 5. STUDYING THE EFFECTS OF COMMON LAKE ERIE BENTHIC MACRO-INVERTEBRATES ON SEDIMENTS AND THE OVERLYING WATER COLUMN, 6. INVESTIGATING ZOOPLANKTON ABUNDANCE IN THE SEDIMENT/WATER INTERFACE ZONE, 7. ESTIMATING FISH LARVAE POPULATIONS IN WESTERN LAKE ERIE AND ASSESSING THE IMPACT OF INTAKE ENTRAINMENT ON THESE POPULATIONS, 8. PROVIDING LOGISTICAL AND ANALYTICAL SUPPORT FOR OTHER RESEARCH GROUPS CONDUCTING EPA SPONSORED RESEARCH ON LAKE ERIE, 9. SUPPORTING CONTINUED DEVELOPMENT AND VERIFICATION OF EPA WATER QUALITY, SEDIMENT DYNAMICS AND FISH LARVAE MORTALITY MODELS FOR LAKE ERIE, 10. PREPARING TECHNICAL REPORTS OF THE FINDINGS FOR EACH PHASE OF THE PROJECT. THE MAIN OBJECT IS TO FOLLOW CHANGES IN THE WATER QUALITY AS A RESULT OF NUTRIENT REMOVAL TO THE WESTERN BASIN, DETERMINE THE NUMBER OF FISH LARVAE IN WESTERN LAKE ERIE IN SUPPORT OF THE DETERMINATION ON THE IMPACT OF POWER PLANTS IN WESTERN LAKE ERIE.

2132

**PROJECT: 03245-BIO-ORGANIC INDICATORS OF GROUND-WATER POLLUTION

STARTING/ COMPLETION DATE : 07/76 - 08/80 : FUNDING : ESTIMATED - FY78 / $ 149853
TASK CODE=L6098-16 **EPA=R804613-03 ** (GRANT) PRIOR FY77 / $ 308221

EPA OFFICER.: WJ DUNLAP EPA/ERL - ADA
INVESTIGATOR.: D BLACK OKLAHOMA STATE UNIV AGRIC EXP STA
MILESTONES...: 03/78 -DEV. ENZYME/BIOL. INDICATORS OF GROUND-WATER CONTAMINATION
04/78 -ORGANIC TRANSPORT AND TRANSFORMATION LITERATURE SEARCH
06/79 -SORPTION ISOTHERMS OF SELECTED ORGANICS
PLAN ID.....: (AP=6098)(OU=8106) PLAN 6098
MANDATE.....: 20-99 HOMA STATE UNIV,, STILLWATER OK 0032
CURR. RESULTS: MANUSCRIPT COMPLETED & REVIEWS RECEIVED & REVISIONS 0032
UNDERWAY. 0032
ORDIS CODES..: RECN-003245 SSIE-ZZ 270 EPA -R804613-03 TASK-L6098-16
ORD -RL10C30-2078 LABN-L614C-006 MAND-20-99
AP -6098 OU -8106 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: TO DETERMINE THE USEFULNESS OF BIOCHEMICAL AND ORGANIC INDICATORS OF GROUND WATER POLLUTION. LITERATURE ANALYSIS AND METHOD DEVELOPMENT WILL BE FOLLOWED BY LABORATORY AND FIELD TESTING. TO IDENTIFY BIOCHEMICAL AND ORGANIC INDICATORS OF GROUND-WATER POLLUTION. THIS PROJECT IS IN TWO PARTS: (1) BIOCHEMICAL INDICATORS: INVESTIGATE THE USE OF ATP, NUCLEIC ACID, PROTEINS, ORGANIC PHOSPHATES AND ENZYMES AS INDICATORS. DEVELOPMENT OF EXTRACTION AND ANALYSIS TECHNIQUES. (2) ORGANIC INDICATORS: STUDY SORPTION, RETENTION, AND MODIFICATION OF ORGANIC COMPOUNDS THAT ARE ADDED OR ARISE BY MICROBIAL OR CHEMICAL ACTION. PREDICT FATE OF SUCH COMPOUNDS AND DEVELOP ANALYTICAL TECHNIQUES. PARTICULAR EFFORT WAS DIRECTED TOWARD DEVELOPING METHODS OF IMPROVED SENSITIVITY FOR DETECTING PROTEIN, LIPOPOLYSACCHARIDES, DNA, ORGANIC PHOSPHATES, AND LACTATE DEHYDROGENASE IN ENVIRONMENTAL SAMPLES. FLUORESCENCE PROCEDURES APPEARED ESPECIALLY PROMISING IN DNA AND LACTATE DEHYDROGENASE ASSAYS. WORK ON METHODS FOR RECOVERING ATP FROM SOILS AND SUBSOILS WAS ALSO CONTINUED, WITH EMPHASIS ON EVALUATION OF THE EFFECTIVENESS OF VARIOUS EXTRACTION PROCEDURES. PROCEDURES EMPLOYING BOILING WATER, BOILING BUFFERS, AND COLD ACIDS AS EXTRACTANTS HAVE THUS FAR RECEIVED SOME STUDY, WHILE WORK ON PROCEDURES USING VARIOUS ORGANIC SOLVENTS IS JUST BEGINNING. A MANUSCRIPT BASED ON THE SURVEY OF AVAILABLE LITERATURE ON ENZYMES AND OTHER SELECTED BIOCHEMICALS IN SOIL AND GROUND WATER WAS COMPLETED AND REVIEWS OF THIS WORK WERE REQUESTED FROM EIGHT QUALIFIED PERSONS OR GROUPS EXTERNAL TO THE GRANTEE'S PROGRAM. MOST OF THESE REVIEWS HAVE NOW BEEN RECEIVED AND REVISIONS TO THE MANUSCRIPT ARE UNDER WAY. THIS PAPER SHOULD BE OF GENERAL INTEREST AND USEFULNESS BECAUSE IT INCLUDES AN EXTENSIVE COMPILATION AND EVALUATION OF METHODS REPORTED IN THE LITERATURE FOR ANALYZING A NUMBER OF BIOCHEMICAL SUBSTANCES IN SOIL AND WATER.

**PROJECT: 00565-HEAVY METAL BIOAVAILABILITY IN SLUDGE-AMENDED SOILS

STARTING/ COMPLETION DATE : 08/76 - 08/79 : FUNDING : ESTIMATED - FY78 / $ 85348
TASK CODE=C6118-0023 **EPA=R804614 ** (GRANT) PRIOR FY77 / $ 147368

EPA OFFICER.: JA RYAN EPA/MERL - CINC
INVESTIGATOR.: DR KEENEY UNIV OF WISCONSIN AGRIC & LIFE SCI/ENTOM DEPT
RB COREY UNIV OF WISCONSIN AGRIC & LIFE SCI/ENTOM DEPT
PA HELMKE UNIV OF WISCONSIN AGRIC & LIFE SCI/ENTOM DEPT
MILESTONES...: 10/79 -FINAL REPORT PUBLISHED
PLAN ID.....: (AP=6118)(DU=8106) WASTEWATER TREATMENT TECHNOLOGY PROGRAMS
MANDATE.....: 30-99 EWATER TREATMENT 0013
CURR. RESULTS: COMMONLY DETERMINED SOIL PROPERTIES DO NOT RELATE T 0012
METAL AVAILABILITY. DIPA EXTRACTION OFFERS LITTLE 0012
AS METHOD FOR PREDICTING METAL BIOAVAILABILITY. LI 0012
CD ACCUMULATES IN CORN TISSUE OR GRAIN. 0012
ORDIS CODES..: RECN=000565 SSIE=GMA 5108 EPA -R804614 TASK-C6118-0023
ORD -RC10830-3078 MAND=30-99 AP -6118
DU -8106 LABT=ALW

PROJ STATUS..: PROJECT=ACTIVE DATA=ORIGINAL CATEGORY=RESEARCH
ABSTRACT.....: OBJECTIVES: EVALUATE SOIL AND SEWAGE SLUDGE FACTORS WHICH AFFECT PLANT UPTAKE OF HEAVY METALS (CADMIUM, ZINC, COPPER AND NICKEL). ELUCIDATE MECHANISMS OF SORPTION AND RELEASE OF THESE METALS IN SLUDGE-AMENDED SOILS AND DEVELOP LABORATORY METHODS OF DETERMINING HEAVY METAL BIOAVAILABILITY. APPROACH: GREENHOUSE AND FIELD TRIALS ARE BEING CONDUCTED TO EVALUATE PLANT UPTAKE OF METALS. LABORATORY RESEARCH USING CHELATING RESINS AND ISOTOPES ARE BEING CONDUCTED TO EVALUATE RETENTION MECHANISMS AND DEVELOP LABORATORY TESTS. PROGRESS: RESULTS OF AN EXTENSIVE GREENHOUSE EXPERIMENT INDICATE COMMONLY DETERMINED SOIL PROPERTIES DO NOT RELATE TO HEAVY METAL AVAILABILITY. FURTHER, THE OFTEN SUGGESTED DTPA EXTRACTION ON A SOIL TEST APPEARS TO OFFER LITTLE PROMISE AS A METHOD FOR PREDICTING METAL BIOAVAILABILITY. A METHOD USING CHELATING AND WEAK CATION EXCHANGE RESINS HAS BEEN DEVELOPED TO PROVIDE SORPTION ISOTHERMS UNDER CONTROLLED PH AND SOLUTION METAL CONCENTRATIONS. NEUTRON ACTIVATION ANALYSIS INDICATED THAT COMMONLY USED DIGESTION PROCEDURES FOR SLUDGES GIVE INCOMPLETE DIGESTION. THE FIELD DATA INDICATE THAT AT RECOMMENDED SLUDGE LOADING RATES, LITTLE CD ACCUMULATES IN CORN TISSUE OR GRAIN.

**PROJECT: 00422-NEW AMINE CARBAMATE GELATION TECHNIQUES FOR USE IN OIL SPILL RECOVERY
OPERATIONS
STARTING/ COMPLETION DATE : 05/77 - 10/78 : FUNDING : ESTIMATED - FY78 / $ 4000
TASK CODE=B623C-602 **EPA=R804628-01 ** (GRANT) PRIOR FY77 / $ 29000

EPA OFFICER.:	U FRANK	EPA/IERL - CINC	
INVESTIGATOR.:	MM BANNISTER	UNIV OF LOWELL	GRADUATE SCH
	A DONATELLI	UNIV OF LOWELL	GRADUATE SCH
	J WALKINSHAW	UNIV OF LOWELL	GRADUATE SCH

MILESTONES...: 10/78 -FINAL REPORT RECEIVED
PLAN ID.....: (AP=623C)(DU=N105) ENERGY RESOURCE EXTRACTION AND HANDLING, OIL & GAS PROD.
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
20-10 AA FOR WATER AND HAZARDOUS MATERIALS

ORDIS CODES..:	RECN=000422	SSIE=ZZ 200	EPA =R804628-01	TASK=B623C-602
	ORD =RB10C30-5078	MAND=10-01	MAND=20-10	
	AP =623C	DU =N105	LABT=EMI	

PROJ STATUS..: PROJECT=ACTIVE DATA=ORIGINAL CATEGORY=RESEARCH
ABSTRACT.....: THE MAIN OBJECTIVE OF THIS RESEARCH IS TO DEVELOP FOR "REAL WORLD" SITUATIONS AND AMINE CARBAMATE GELATION TECHNIQUE TO FACILITATE THE REMOVAL OF PETROLEUM DERIVED OIL SPILLED ON OCEAN OR INLAND WATERS. THE SPECIFIC OBJECTIVES ARE: A. DETERMINATION OF PHYSICAL PROPERTIES OF A SELECTED GELLING AGENT (DEHYDROABIETYL AMINE), INCLUDING SOLUBILITY AND DETERGENCY DETERMINATIONS OF THE AGENT IN WATER/OIL MATRICES. B. DEVELOPMENT OF CARBAMATING AGENTS OTHER THAN CARBON DIOXIDE. C. DETERMINE THE FEASIBILITY OF OIL AND AGENT RECOVERY BY CENTRIFUGATION. D. PILOT STUDIES OF GELATION TECHNIQUE IN LARGE LABORATORY WAVE TANKS. E. FIELD TESTS OF GELATION TECHNIQUES AT EPA TEST FACILITIES. F. PRELIMINARY EVALUATION OF AGENT FOR GELLING NON PETROLEUM HAZARDOUS MATERIALS. G. PRELIMINARY EVALUATION OF THE GELATION TECHNIQUE'S UTILITY IN THE PROPHYLACTIC TREATMENT OF BEACH FRONTS.

**PROJECT: 03388-EFFECT OF PASTURING ON NON-POINT SURFACE RUNOFF

STARTING/ COMPLETION DATE : 11/76 - 10/79 : FUNDING : ESTIMATED - FY78 / $ 96813
TASK CODE=L617D-29 **EPA=R804631-03 ** (GRANT) PRIOR FY77 / $ 176526

EPA OFFICER.:	RD KREIS	EPA/ERL - ADA	
INVESTIGATOR.:	RK WHITE	OHIO AGRIC R&D CTR	AGRIC ENG DEPT
	RW VANKEUREN	OHIO AGRIC R&D CTR	AGRIC ENG DEPT
	LB OWENS	USDA	SOIL SCI DIV
	WM EDWARDS	USDA	SOIL SCI DIV

MILESTONES...: 00/00 -DATA FURNISHED QUARTERLY TO ATHENS LAB, FOR MODELING
11/79 -FINAL REPORT SUBMITTED
PLAN ID.....: (AP-617D)(DU-) ANIMAL PRODUCTION
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
CURR. RESULTS: 17 MOS. OF DATA OBTAINED. 0037
ORDIS CODES..: RECN-003388 SSIE-GMA 3422 1 EPA -R804631-03 TASK-L617D-29
ORD -RL10830-1078 LABN-L770D-211 MAND-10-01
AP -617D LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH

ABSTRACT.....: THIS PROJECT WILL OBTAIN HYDROLOGIC AND CHEMICAL DATA FOR RUNOFF EVENTS ON THREE SELECTED WATERSHEDS WITH DIFFERENT LIVESTOCK PASTURING REGIMES. THE HYDRO-CHEMICAL DATA WILL BE EVALUATED AND COMPARED TO HYDROLOGIC HISTORY OF THE WATERSHEDS TO IDENTIFY HYDROLOGIC FACTORS AND THE LIVESTOCK/AGRONOMIC MANAGEMENT PRACTICES THAT CONTRIBUTE TO OR DECREASE THE CONTRIBUTION OF POLLUTANTS TO NON-POINT SURFACE RUNOFF. ALSO THE DEGREE OF BACTERIAL POLLUTION PRESENT IN NON-PUINT SURFACE RUNOFF FROM CATTLE PASTURES WILL BE ESTABLISHED. THIS DATA WILL BE USED IN DEVELOPING RUNOFF-LOADING MODELS FOR PASTURE LAND TO ASSESS NON-POINT SOURCE POLLUTION POTENTIAL. A MEMORANDUM OF UNDERSTANDING BETWEEN THE OHIO AGRICULTURAL RESEARCH AND DEVELOPMENT CENTER (OARDC) WOOSTER, OHIO AND THE USDA-ARS NORTH APPALACHIAN EXPERIMENTAL WATERSHED (NAEW), COSHOCTON, OHIO, ENABLES THESE INSTITUTIONS TO CONDUCT COOPERATIVE RESEARCH. THE WATERSHEDS AT NAEW FOR THIS PROJECT HAVE OVER 30 YEARS OF HYDROLOGIC HISTORY. PASTURING REGIMES TO BE MONITORED ARE: (1) ROTATIONAL PASTURING OF CATTLE IN THE SUMMER AND WINTER FEEDING ON ONE WATERSHED WITH HAY BROUGHT TO IT, (2) SUMMER ROTATIONAL PASTURING ONLY, AND (3) WINTER PASTURE WHERE CATTLE ARE FED SAVED AUTUMN REGROWTH AND HAY HARVESTED ON THE SITE. SEVENTEEN MONTHS OF DATA HAS BEEN OBTAINED TO DATE FOR THE THREE PASTURED WATERSHEDS AND ONE YEAR OF DATA ON A CONTROL WATERSHED. AN ADDITIONAL 19 MONTHS OF DATA COLLECTION IS PROPOSED THROUGH THE DURATION OF THE PROJECT. RUNOFF SAMPLES ARE BEING ANALYZED FOR N(H3, NO2/NO3 AND TOTAL N), TOTAL-P, TOC, COD, BOD, SEDIMENT YIELD AND SEDIMENT N AND P.

**PROJECT: 03873-CARCINOGENIC PHOTOOXIDATION OF PRODUCT FROM PETROLEUM PHA'S AT AIR-SEA INTERFACE
STARTING/ COMPLETION DATE : 08/76 - 02/80 : FUNDING : ESTIMATED - FY78 / $ 77100
TASK CODE=0625A-1-10 **EPA=R804647-02 ** (GRANT) PRIOR FY77 / $ 42100
EPA OFFICER.: NL RICHARDS EPA/ERL -GULF BREEZE
INVESTIGATOR.: JL LASETER UNIV OF NEW ORLEANS BIOLOGY DEPT
GW GRIFFIN UNIV OF NEW ORLEANS BIOLOGY DEPT
MILESTONES...: 12/78 -COMPLETE METHODS DEVELOPMENT
12/79 -COMPLETE SCREENING OF PHOTOCHEMICAL INTERMEDIATES
PLAN ID.....: (AP-625A)(DU-N140) EFFECTS OF ENERGY-RELATED POLL. ON ORGANISMS & ECOSYSTEMS
ORDIS CODES..: RECN-003873 SSIE-ZZ 237 EPA -R804647-02 TASK-0625A-1-10
AP -625A DU -N140 LABT-HEE
PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY- UNKN
ABSTRACT.....: THE PRIMARY PURPOSE OF THE PROPOSED PROGRAM WILL BE TO DETERMINE THE MAJOR PHOTOOXIDATION PRODUCTS OF PETROLEUM DERIVED POLYNUCLEAR AROMATIC HYDROCARBONS (PHA). THESE STUDIES WILL BE DESIGNED TO PARTIALLY ELUCIDATE "WEATHERING" PHENOMENON OF PETROLEUM AT AN AIR-WATER INTERFACE OF MARINE ENVIRONMENTS. PARTICULAR ATTENTION WILL BE GIVEN TO THE PHOTOOXIDATION PRODUCTS WHICH MAY HAVE MUTAGENIC OR OTHER BIOLOGICAL PROPERTIES. A PORTION OF THE PROGRAM WILL INVOLVE CHROMATOGRAPHIC RESOLUTION AND MASS SPECTROMETRIC CHARACTERIZATION OF AROMATIC HYDROCARBON AND THEIR BIOLOGICALLY SIGNIFICANT OXIDATION PRODUCTS IN PREVIOUSLY COLLECTED FIELD SAMPLES COLLECTED AT THE AIR-SEA INTERFACE.

**PROJECT: 03885-DETECTION OF CARCINOGENICITY OF OILS IN SEA WATER - USE OF HYBRID FISH AND FOOD CHAINS
STARTING/ COMPLETION DATE : 08/76 - 08/79 : FUNDING : ESTIMATED - FY78 / $ 47000
TASK CODE=0625F-1-03 **EPA=R804650-03 ** (GRANT) PRIOR FY76 / $ 86200
EPA OFFICER.: NL RICHARDS EPA/ERL -GULF BREEZE
INVESTIGATOR.: DG HUMM UNIV OF NORTH CAROLINA SCH OF ARTS & SCI
MILESTONES...: 06/79 -PRELIMINARY EVALUATION OF CARCINOGEN SCREENING METHODOLOGY
06/80 -VALIDATION OF IN VIVO METHOD FOR CARCINOGEN SCREENING
PLAN ID.....: (AP-625F)(DU-N140) AIR, WATER AND MULTI-ROUTE EXPOSURE & THEIR EFFECTS (HEALTH)
ORDIS CODES..: RECN-003885 SSIE-ZZ 233 EPA -R804650-03 TASK-0625F-1-03
AP -625F DU -N140 LABT-HEE
PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY- UNKN
ABSTRACT.....: WE HAVE DEVELOPED AND ARE CONTINUING THE VALIDATION OF A QUICK, SENSITIVE METHOD OF SCREENING FOR WATER-BORN CARCINOGENS USING LABORATORY REARED FISH, AS A PART OF AN OVERALL SCREENING SYSTEM FOR CARCINOGENS. WE HOPE TO EXTEND THE TECHNIQUE TO A TISSUE CULTURE SYSTEM. EARLY APPLICATIONS ARE ALSO PLANNED TO INCLUDE THE EXAMINATION OF THE KINETICS OF TRANSMISSION OF CARCINOGENS ALONG SIMULATED FOOD WEBS.

**PROJECT: 00237-DIALYSIS PURIFICATION OF METAL FINISHING RINSEWATER

STARTING/ COMPLETION DATE : 12/75 - 06/79 : FUNDING : ESTIMATED - FY78 / $ 23000
TASK CODE=B6108-022 **EPA=R804655 ** (GRANT) PRIOR FY77 / $ 38000
EPA OFFICER.: M STINSON EPA/IERL - CINC
INVESTIGATOR.: CR WHEELER SEABOARD METAL FIN CO
MILESTONES...: 04/79 -DRAFT REPORT
06/79 -FINAL REPORT RECEIVED
PLAN ID.....: (AP-6108)(DU-8118) MATERIALS PROCESSING, INDUSTRIAL PT. SOURCES (WATER)
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-000237 SSIE-ZZ 677 EPA -R804655 TASK-B6108-022
ORD -R810C30-1078 MAND-10-01 AP -610B
DU -8118 LABT-EMI

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVE OF THIS GRANT PROPOSAL IS TO DEMONSTRATE UNDER ACTUAL PLANT CONDITIONS THE FEASIBILITY AND ECONOMICS OF A NEWLY DEVELOPED DIALYSIS SYSTEM FOR RECOVERY OF NICKEL FROM METAL FINISHING RINSEWATER. THE PROPOSED DEMONSTRATION WILL BE AN EIGHT-MONTH PROJECT AND THE COLLECTED OPERATIONAL DATA WILL ENABLE COMPARISON OF THIS TECHNOLOGY WITH EXISTING NICKEL RECOVERY SYSTEMS. THE PROCESS INVOLVES PASSING A WASTEWATER SOLUTION CONTAINING METAL IONS (HERE NICKEL) THROUGH THE INSIDE OF SMALL DIAMETER TUBES FABRICATED FROM A CATION EXCHANGE MEMBRANE. A SUITABLE REGENERANT (HERE SULFURIC ACID) IS PASSED OVER THE OUTSIDE OF THE TUBES COUNTERCURRENT TO THE WASTE STREAM FLOW. A DRIVING FORCE IS A DIFFERENCE IN CONCENTRATION AND NOT THE ELECTRICAL OR OTHER FORM OF ENERGY. THE METAL ION (HERE NICKEL) CAN BE EASILY CONCENTRATED TO OVER TEN TIMES ITS ORIGINAL CONCENTRATION IN THE WASTE STREAM. THE MAJOR ADVANTAGE OF THIS TECHNIQUE IS THAT NICKEL COMPOUND IS CONCENTRATED WITHOUT IMPURITIES AND CAN BE RETURNED TO THE PLATING BATH. PROPER DESIGN OF THE SYSTEM CAN OVERCOME ONE DISADVANTAGE, WHICH IS PRODUCTION OF ACIDIFIED WATER INSTEAD OF PURE WATER. IN A METAL FINISHING SHOP A USE FOR SLIGHTLY ACIDIFIED WATER CAN BE FOUND.

**PROJECT: 00352-ENVIRONMENTAL MONITORING & ASSESSMENT OF COAL STRIP MINING & RECLAMATION IN THE FOUR CORNER AREA
STARTING/ COMPLETION DATE : 09/76 - 03/80 : FUNDING : ESTIMATED - FY78 / $ 196000
TASK CODE=B6238-418 **EPA=R804679-03 ** (GRANT) PRIOR FY77 / $ 341000

EPA OFFICER,:	JF MARTIN	EPA/IERL - CINC	
INVESTIGATOR,:	MM FOGEL	UNIV OF ARIZONA	SCH OF AGRIC
	JL THAMES	UNIV OF ARIZONA	SCH OF AGRIC
	TR VERMA	UNIV OF ARIZONA	SCH OF AGRIC
	LH HEKMAN	UNIV OF ARIZONA	SCH OF AGRIC
	L DUCKSTEIN	UNIV OF ARIZONA	SCH OF AGRIC

MILESTONES,..: 03/80 -FINAL REPORT ON ENVIRONMENTAL MONITORING IN THE FOUR CORNERS AREA
PLAN ID.....: (AP-6238)(OU-N105) ENERGY RESOURCE EXTRACTION AND HANDLING, SOLID FOSSIL FUELS
MANDATE.....: 10-99 -NUCLEAR ENERGY) PL 93-577 0008
ORDIS CODES,.: RECN-000352 SSIE-ZZ 422 EPA -R804679-03 TASK-B6238-418
ORD -R810C30-1078 MAND-10-99 AP -6238
OU -N105 LABT-EMI

PROJ STATUS,.: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH

ABSTRACT.....: THE OVERALL OBJECTIVE OF THE PROJECT IS TO DEVELOP CRITERIA FOR THE OPTIMAL MANAGEMENT OF LAND THAT HAS BEEN DISTURBED BY COAL STRIP MINING ACTIVITIES. THE CRITERIA WILL BE BASED ON MINIMIZING AIR AND WATER POLLUTION. SPECIFICALLY, THE PROJECT WILL BE DEVOTED PRINCIPALLY TO MONITORING (1) TWO SELECTED GROUNDWATER BASINS, (2) THREE SURFACE WATER SITES AND (3) THREE AIR QUALITY SITES TO DETERMINE THE EFFECTS OF STRIP MINING ON THE ENVIRONMENT. SEVERAL HOLES WILL BE DRILLED, CASED AND MONITORED FOR EACH OF THE SHALLOW GROUNDWATER BASINS. INFILTRATION STUDIES WILL BE USED TO ASCERTAIN THE MOBILITY OF POLLUTANTS FROM THE LAND SURFACE TO GROUNDWATER. THE SURFACE WATER SITES WILL INVOLVE BOTH MINED AND UNDISTURBED AREAS AS WELL AS REVEGETATED AREAS WHICH ARE EITHER IRRIGATED OR RAIN FED. HIGH VOLUME AIR SAMPLERS WILL BE USED TO MONITOR PARTICULATE CONCENTRATIONS BEFORE, DURING AND AFTER MINING DEVELOPMENT. THESE EFFORTS WILL RESULT IN THE DEVELOPMENT, OPERATION, AND VERIFICATION OF A GROUND WATER RECHARGE MODEL, THE DEVELOPMENT OF A METHODOLOGY FOR MONITORING RUNOFF, SEDIMENTATION AND WATER QUALITY, THE DEVELOPMENT OF PREDICTIVE MODELS TO DETERMINE THE EFFECTS OF MINING ACTIVITIES ON AIR QUALITY, THE INVESTIGATION OF VEGETATIVE AND CULTURAL TREATMENTS THAT WILL AID IN RECLAMATION, AND THE EXAMINATION OF ALTERNATIVE LAND AND WATER USES THAT ARE OF MORE VALUE THAN LAND U

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
* OFFICE OF RESEARCH AND DEVELOPMENT *
LIST OF PROJECTS FROM MATCHED GRANT SYSTEM INPUT
* O R D I S D A T A E X T R A C T *

**PROJECT: 03683-SEDIMENTS OF LAKE HURON

STARTING/ COMPLETION DATE : 08/76 - 10/79 : FUNDING : ESTIMATED - FY78 / $ 80000
TASK CODE=N608A-014 **EPA=R804686-02 ** (GRANT) PRIOR FY77 / $ 110200

EPA OFFICER.: MD MULLIN EPA/ERL - DULUTH
INVESTIGATOR.: JA ROBBINS UNIV OF MICHIGAN GR LAKES RES DIV
K JOHANSEN UNIV OF MICHIGAN GR LAKES RES DIV
J KREZOSKI UNIV OF MICHIGAN GR LAKES RES DIV
MILESTONES...: 10/79 -FINAL REPORT
PLAN ID.....: (AP-608A)(DU-8115) FRESHWATER ECOLOGICAL PROCESSESS & EFFECTS
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-003683 SSIE-ZZ 246 EPA -R804686-02 TASK-N608A-014
ORD -RN10C30-1078 LABN-N769 -014 MAND-10-01
AP -608A DU -8115 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THIS STUDY SHOULD PROVIDE PRESENT AND HISTORICAL RATES OF ACCUMULATION OF METALS, ORGANICS AND NUTRIENTS IN THE FINE-GRAINED SEDIMENTS OF LAKE HURON, THIS PROJECT IS A CONTINUATION OF AN EARLIER EPA FUNDED STUDY (R803086) OF THE SOUTHERN PART OF LAKE HURON, MULTIPLE UNDISTURBED 50 CM LONG SEDIMENT CORES COLLECTED FROM OVER A WIDE AREA OF THE LAKE ARE SECTIONED ABOARD SHIP VIA HYDRAULIC EXTRUSION SYSTEM WHICH PERMITS PRECISE CENTIMETER THICK SECTIONING OF FLUID SEDIMENTS NEAR THE SEDIMENT-WATER INTERFACE, CORE SECTIONS, FROZEN ABOARD SHIP FOR PRESERVATION, ARE SUBSEQUENTLY FREEZE DRIED AND ACID EXTRACTS ANALYZED FOR NA, MG, CA, K, MN, FE, ZN, CU, NI, PB, CR, P, IN ADDITION, SELECTED SUBSAMPLES ARE ANALYZED VIA NEUTRON ACTIVATION ANALYSIS FOR AL, CA, FE, K, MG, MN, FE, NA, TI, AS, BA, BR, CE, CO, CR, CS, CU, EU, HF, LA, LU, RB, SB, SC, SM, TH, U, V, AND YB. SOME CORES ARE SECTIONED AND SECTIONS SQUEEZED ABOARD SHIP, AT IN SITU TEMPERATURES UNDER NITROGEN TO OBTAIN PORE WATER. THE DISTRIBUTIONS OF DISSOLVED NA, MG, CA, K, MN, FE, SI, P AND SELECTED MINOR ELEMENTS PROVIDE ESTIMATES OF DIAGENIC MOBILITY AND SEDIMENT-WATER EXCHANGE RATES. AT SOME LOCATIONS WE ARE ALSO MEASURING THE VERTICAL DISTRIBUTION OF BENTHIC MACROINVERTEBRATES, AS THEIR ACTIVITIES IN NEAR SURFACE SEDIMENTS NOT ONLY ALTER ELEMENT PROFILES BUT AFFECT SEDIMENT-WATER EXCHANGE. TO DETERMINE ELEMENT ACCUMULATION RATES SEDIMENT CORES ARE DATED BY THE LEAD-210 METHOD. RECOVERY OF THE SEDIMENT-WATER INTERFACE IS CHECKED BY MEASURING THE DISTRIBUTION O

250

**PROJECT: 03693-COMPARATIVE KINETIC STUDIES OF NUTRIENT UPTAKE AND GROWTH IN THE GREAT LAKES PHYTOPLANKTONS

STARTING/ COMPLETION DATE : 08/76 - 02/80 : FUNDING : ESTIMATED - FY78 / $ 115000
TASK CODE=N608A-028 **EPA=R804689-03 ** (GRANT) PRIOR FY77 / $ 125000

EPA OFFICER.: VJ BIERMAN EPA/ERL - DULUTH
INVESTIGATOR.: G RHEE STA DIV OF LABS/RES DEPT OF HLTH
MILESTONES...: 08/77 -ANNUAL REPORT
08/78 -ANNUAL REPORT
02/80 -FINAL REPORT
PLAN ID.....: (AP-608A)(DU-8115) FRESHWATER ECOLOGICAL PROCESSESS & EFFECTS
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-003693 SSIE-GMA 3085 2 EPA -R804689-03 TASK-N608A-028
ORD -RN10830-1078 LABN-N769 -028 MAND-10-01
AP -608A DU -8115 LABT-HEF

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVE OF THE PROJECT IS TO CONDUCT A COMPARATIVE STUDY OF THE INTERACTIONS OF GREAT LAKES PHYTOPLANKTON WITH PHOSPHORUS AND NITROGEN, IN FRESHWATER ENVIRONMENTS. LIMITING NUTRIENT FOR BIOLOGICAL PRODUCTION IS FREQUENTLY P FOLLOWED BY N. RECENT STUDIES OF NUTRIENT-LIMITED GROWTH IN PHYTOPLANKTON REVEALED THAT GROWTH RATE IS REGULATED BY INTRACELLULAR NUTRIENT POOL(S). IN CASE OF P, CELLULAR INORGANIC POLYPHOSPHATES (PPI) IS THE GROWTH REGULATING POOL IN SCENEDESMUS SP. AND THIS POOL ALSO APPEARS TO AFFECT P UPTAKE ALONG WITH EXTERNAL P LEVELS. FOR N, SUCH COMPOUND HAS BEEN IDENTIFIED AS CELL FREE AMINO ACIDS ALTHOUGH PROTEIN APPEARS TO BE THE MAJOR FRACTION IN WHICH EXCESS N ACCUMULATES. THEREFORE, IT WILL BE INVESTIGATED WHETHER THE INVOLVEMENT OF PPI IN P-LIMITED GROWTH AND P UPTAKE, AND OF FREE AMINO ACIDS IN N-LIMITED GROWTH AND N UPTAKE, IS UNIVERSAL IN ORGANISMS BELONGING TO VARIOUS TAXONOMIC GROUPS. ATTEMPTS WILL BE MADE TO DEVELOP KINETIC MODELS FOR GROWTH AND N AND P UPTAKE INVOLVING NUTRIENT POOLS WHICH CAN APPLY REGARDLESS OF SPECIES OR TYPES OF NUTRIENT INVOLVED. THE TRANSITION BETWEEN N AND P LIMITATION IS AN IMPORTANT ASPECT IN POLLUTED ENVIRONMENTS. GROWTH DURING THIS TRANSITION IS DESCRIBED BY A SIMPLE THRESHOLD EQUATION OF NUTRIENT-LIMITED GROWTH. THIS IMPLIES THAT DIFFERING OPTIMAL N/P ATOMIC RATIO IN COMPETING SPECIES MAY BE A BASIS FOR COMPETITIVE EXCLUSION AND COEXISTENCE. THE VARIABILITY OF THE RATIO IN DIFFERENT SPECIES HAS BEEN FOUND TO BE GREAT. THIS INVESTIGATION WILL CONTINUE IN MANY SPECIES ISOLATED FROM THE GREAT LAKES. THE INVESTIGATION OF THE EFFECT OF THE MAJOR ENVIRONMENTAL VARIABLES, TEMPERATURE AND LIGHT, ON GROWTH AND NUTRIENT UPTAKE WILL CONTINUE. INTERACTIONS OF NUTRIENT-LIGHT AND NUTRIENT-TEMPERATURE WILL ALSO BE STUDIED.THIS WORK WILL EXTENSIVELY USE CHEMOSTATS AND TURBIDOSTATS. EXPERIMENTAL ORGANISMS ARE AXENIC ISOLATES FROM THE GREAT LAKES.

**PROJECT: 00930-HAZARDOUS WASTE SAMPLING, ANALYSIS, AND COMPATIBILITY STUDY

STARTING/ COMPLETION DATE : 09/76 - 12/79 : FUNDING : ESTIMATED - FY78 / $ 50000
TASK CODE=C618A-7037 **EPA=R804692-01 ** (GRANT) PRIOR FY77 / $ 338200
EPA OFFICER,: RA CARNES EPA/MERL - CINC
INVESTIGATOR,: RD STEPHENS STATE DEPT. OF HEALTH
DL STORM STATE DEPT. OF HEALTH
MILESTONES...: 06/77 -HAZARDOUS WASTE COMPATIBILITY OVERVIEW
10/78 -REPORT: HAZARD. WASTE SOUNDING PROCED.
04/79 -HAZARDOUS WASTE COMPATIBILITY PROTOCOLS
08/79 -OBTAIN PROCED. FOR FRACTIONATING HAZ. WASTE STREAMS
12/79 -FIELD TEST KIT FOR REACT. TEST OF HAZ. WASTE STREAMS
PLAN ID.....: (AP=618A)(DU=D110) SOLID & HAZARDOUS WASTE MANAGEMENT
FINAL OUTPUT,: FIELD TESTING KIT FOR WASTE REACTIVITY 0020
MANDATE.....: 10-05 RESOURCE CONSERVATION AND RECOVERY ACT
ORDIS CODES..: RECN-000930 SSIE-GMA 3302 2 EPA -R804692-01 TASK-C618A-7037
ORD -RC10830-1078 MAND-10-05 AP -618A
DU -D110 LABT-ALM

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OVERALL OBJECTIVES OF THIS RESEARCH PROGRAM ARE TO INVESTIGATE PROCEDURES FOR SAMPLING, CLASSIFYING, ANALYZING, AND HANDLING HAZARDOUS WASTES. A SERIES OF PROCEDURAL FIELD MANUALS WILL RESULT FROM THIS PROGRAM THAT WILL BE PRIMARILY DIRECTED TO PERSONS WHO ARE RESPONSIBLE FOR SAMPLING, HANDLING, AND DISPOSING OF HAZARDOUS WASTES. THE INFORMATION AND KNOWLEDGE GENERATED BY THIS PROGRAM PROVIDE VITALLY NEEDED GUIDELINES FOR HAZARDOUS WASTE HANDLERS AND ESTABLISH BASE-LINE DATA FOR THE DEVELOPMENT AND REFINEMENT OF FUTURE STATE AND FEDERAL HAZARDOUS WASTE MANAGEMENT REGULATIONS. IN ADDITION TO THE AFOREMENTIONED A SPECIAL AREA OF INVESTIGATION HAS BEEN SUPPORTED TO DEVELOP A FIELD TESTING KIT FOR WASTE REACTIVITY. THIS WILL SUPPORT THE NEED FOR BETTER CONTROL OVER FINAL DISPOSITION OF WASTE STREAMS AND AVOID ACCIDENTS.

**PROJECT: 00254-EVALUATION OF PVC WASTES RECLAIMED BY THE HAFNER PROCESS

STARTING/ COMPLETION DATE : 11/76 - 10/78 : FUNDING : ESTIMATED - FY78 / $ 65000
TASK CODE=B610B-141 **EPA=S804693 ** (GRANT) PRIOR FY77 / $ 55000
EPA OFFICER,: M STUTSMAN EPA/IERL - CINC
INVESTIGATOR,: EA HAFNER HAFNER INDUSTRIES INC
MILESTONES...: 10/78 -FINAL REPORT RECEIVED
PLAN ID.....: (AP=610B)(DU=B118) MATERIALS PROCESSING, INDUSTRIAL PT. SOURCES (WATER)
MANDATE.....: 40-99 0015
ORDIS CODES..: RECN-000254 SSIE-GMA 5467 EPA -S804693 TASK-B610B-141
ORD -RB10830-4078 MAND-40-99 AP -610B
DU -B118 LABT-EMI

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVE OF THIS RESEARCH PROJECT IS TO DEMONSTRATE THE TECHNICAL FEASIBILITY OF RECOVERING PVC RESIN, PLASTICIZER AND OTHER MATERIALS FROM PVC MANUFACTURING WASTE COMPOSITIONS USING THE HAFNER RECOVERY PROCESS.FIVE PVC WASTE FEEDSTOCKS USED IN THIS STUDY WILL BE FURNISHED BY MAJOR U.S. PRODUCERS WHO WILL COOPERATE IN THIS STUDY BY SUPPLYING DRUMMING SAMPLES OF PVC FLOORING, WALL COVERING, UPHOLSTERY, SOUND RECORDS AND INSULATED WIRE WASTES. THE RECOVERED MATERIALS WILL BE RECOMPOUNDED AND EVALUATED FOR PHYSICAL PROPERTIES.

**PROJECT: 00259-REMOVAL AND RECOVERY OF FLUOBORATES FROM ELECTROPLATING WASTEWATER

STARTING/ COMPLETION DATE : 10/76 - 07/79 : FUNDING : ESTIMATED - FY78 / $ 30000
TASK CODE=B6108-405 **EPA=R804710-01 ** (GRANT) PRIOR FY77 / $ 50000

EPA OFFICER,: MK STINSON EPA/IERL - CINC
INVESTIGATOR,: J LISKOWITZ NEW JERSEY INST OF TECH
MILESTONES...: 07/79 FINAL REPORT RECEIVED
PLAN ID.....: (AP-6108)(DU-B118) MATERIALS PROCESSING, INDUSTRIAL PT. SOURCES (WATER)
0006
MANDATE.....: 30-99 ICAL ENGINEERING
ORDIS CODES..: RECN-000259 SSIE-GMA 4951 EPA -R804710-01 TASK-B6108-405
ORD -R610830-3078 MAND-30-99 AP -6106
DU -B118 LABT-EMI

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE PROJECT INVOLVES DEVELOPMENT OF A CLOSED-LOOP ELECTRODIALYSIS SYSTEM FOR THE RECOVERY AND RECYCLE OF FLUOBORATE ELECTROPLATING RINSEWATER. PRELIMINARY EVALUATION OF ELECTRODIALYSIS SHOWS PROMISE AS A REPLACEMENT FOR EVAPORATIVE TREATMENT TO REDUCE THE COPPER, TIN, LEAD AND FLUOBORATE IN COUNTER-CURRENT RINSEWATER TO LEVELS THAT WILL ALLOW THE WATERS TO BE REUSED AS RINSE. IN ADDITION, A TWENTY FOLD INCREASE BOTH THE CATIONS AND ANIONS OVER THAT ENCOUNTERED IN THE RINSE IS OBTAINED AS A PRODUCT WHICH CAN BE DIRECTLY RECYCLED BACK TO THE PLATING BATH. ION FLOTATION USING THE ACETATE SALTS OF N-ALKYLAMINE SURFACTANTS AS THE FLOTATION AGENT IS ALSO BEING INVESTIGATED FOR THE REMOVAL OF FLUOBORATES. ION FLOTATION CAN BE USED AS A POLISHING TREATMENT IN SEQUENCE WITH ELECTRODIALYSIS OR ALONE AS AN ALTERNATIVE TREATMENT TECHNOLOGY

**PROJECT: 02191-DEVELOP AND EVALUATE A SOLID DEVICE FOR THE COMPLETE COLLECTION OF
ATMOSPHERIC POLY-CHLOROBIPHENYLS (PCB)
STARTING/ COMPLETION DATE : 03/77 - 05/80 : FUNDING : ESTIMATED - FY78 / $ 45000
TASK CODE=G7128-BE-01 **EPA=R804716 ** (GRANT) PRIOR FY77 / $ 45000

EPA OFFICER.: JE MEEKER EPA/ESRL - RTP
INVESTIGATOR.: TF BIDLEMAN UNIV OF SOUTH CAROLINA SCI & MATH/CHEM DEPT
WN BILLINGS UNIV OF SOUTH CAROLINA SCI & MATH/CHEM DEPT

MILESTONES...: 12/77 -COLLECTION MEDIA FIELD TESTED
12/78 -COLLECTION MEDIA SELECTED
06/79 -PROTOTYPE SAMPLER COMPLETED
12/79 -EVALUATION OF SAMPLER COMPLETED
12/80 -OPTIMIZATION OF SAMPLER COMPLETED
06/81 -ORD FINAL REPORT SUBMITTED

PLAN ID.....: (AP-7128)(DU-A130) CHAR. AND MEASUREMENT METHODS DEVELOPMENT (AIR)
MANDATE.....: 10-02 CLEAN AIR ACT 0045
CURR. RESULTS: LOW MOLECULAR WEIGHT PCB DETERMINATION FOUND TO HAV 0045
INTERFERENCE FROM TECHNICAL CHLORIDANE. TASK-G7128-BE-01

ORDIS CODES..: RECN-002191 SSIE-GMA 3272 2 EPA -R804716
ORD -RG10830-1078 LABN-G7128-BB-04 MAND-10-02
AP -7128 DU -A130 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: ATMOSPHERIC SAMPLING FOR PCBS IS IMPORTANT SINCE THE ATMOSPHERE IS THE MAJOR MODE OF TRANSPORT OF THESE SUBSTANCES. THE OBJECTIVE IS TO PERFECT A HIGH VOLUME PORTABLE AIR SAMPLING SYSTEM TO QUANTITATE PCBS AND OTHER HALOGENATED HYDROCARBONS, BOTH PARTICULATE AND VAPOR PHASE, AS A FUNCTION OF SEASON, WIND DIRECTION AND FORCE, PRECIPITATION AND SOLAR RADIATION. THE APPROACH IS TO SIMULTANEOULSY COLLECT AMBIENT AIR SAMPLES WITH A GROUP OF SOLID AND LIQUID PHASE ABSORBANTS TO BE COMPARED. THE BEST ABSORBANTS ARE THEN SELECTED AND A COLLECTION UNIT IS DESIGNED. LABORATORY AND FIELD WORK WILL BE CONDUCTED TO EVALUATE AND DEVELOP THE COLLECTION SYSTEM. LOW MOLECULAR WEIGHT PCB DETERMINATION WAS FOUND TO HAVE INTERFERENCE FROM TECHNICAL CHLORIDANE. TENEX GC RESIN IS BEING TESTED AS A COLLECTOR FOR AIRBORNE PCBS. THE COLLECTION EFFICIENCY STUDIES FOR POLYURETHANE USING INDIVIDUAL PCB ISOMERS DEPENDS UPON THE ISOMER USED.

25-1A

**PROJECT: 00348-VEGETATIVE STABILIZATION OF SPENT OIL SHALES

STARTING/ COMPLETION DATE : 10/76 - 07/80 : FUNDING : ESTIMATED - FY78 / $ 44000
TASK CODE=86238-358 **EPA-R804719-02 ** (GRANT) PRIOR FY77 / $ 44000

EPA OFFICER.: ER BATES
INVESTIGATOR.: WA BERG — EPA/IERL - CINC — SCH OF AGRIC SCI
JT HERRON — COLORADO STATE UNIV — SCH OF AGRIC SCI
COLORADO STATE UNIV
MILESTONES...: 07/80 -FINAL REPORT RECEIVED
PLAN ID.....: (AP-623B)(DU-N105) ENERGY RESOURCE EXTRACTION AND HANDLING, SOLID FOSSIL FUELS 0008
MANDATE.....: 30-99 L ENGINEERING 0008
CURR. RESULTS: COMPREHENSIVE REPORT ON ONE OF TWO SETS OF PLOTS AT PRINTERS. 0008 TASK-86238-358

ORDIS CODES..: RECN-000348 SSIE-ZZ 440 EPA -R804719-02
ORD -RB10C30-3078 MAND-30-99 AP -623B
DU -N105 LABT-EMI

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH

ABSTRACT.....: OBJECTIVES: TO INVESTIGATE SURFACE STABILITY OF AND SALT MOVEMENT IN FINE-TEXTURED (TOSCO), MODERATELY COARSE-TEXTURED (U.S. BUREAU OF MINES GAS COMBUSTION PROCESS), AND COARSE-TEXTURED (PARAHO DIRECT PROCESS) SPENT SHALES AND SPENT SHALES COVERED WITH SOIL AFTER VEGETATION HAS BEEN ESTABLISHED BY INTENSIVE TREATMENTS AND THEN LEFT UNDER NATURAL PRECIPITATION CONDITIONS. APPROACH: FIELD PLOTS HAVE BEEN ESTABLISHED IN THE COLORADO OIL SHALE REGION USING THE ABOVE SPENT OIL SHALES, SOIL-COVER OVER THE SPENT SHALES AND SOIL CONTROLS. THE PLOTS HAVE SURFACE RUNOFF COLLECTORS SO THE QUANTITY AND QUALITY OF RUNOFF CAN BE MEASURED. PROGRESS: A COMPREHENSIVE REPORT ON ONE OF THE TWO SETS OF PLOTS IS NOT AT THE PRINTERS. THE RESEARCH AND REPORT IS SPONSORED BY THE EPA INDUSTRIAL ENVIRONMENTAL RESEARCH LABORATORY, CINCINNATI. THE REPORT IS "VEGETATIVE STABILIZATION OF SPENT OIL SHALES" BY H.P. HARBERT AND W.A. BERG.

**PROJECT: 00932-DETECTION, OCCURRENCE, CHARACTERIZATION, AND PERSISTENCE OF MICROBES IN LANDFILL LEACHATES
STARTING/ COMPLETION DATE : 09/77 - 09/79 : FUNDING : ESTIMATED - FY78 / $ 91091
TASK CODE=C618A-7038 **EPA=R804733-02 ** (GRANT) PRIOR FY77 / $ 58000

EPA OFFICER.: DR BRUNNER EPA/MERL - CINC
INVESTIGATOR.: PV SCARPINO UNIV OF CINCINNATI SCH OF ENG/ELEC ENG TECH
MILESTONES...: 09/77 -PROJECT START
09/79 -PROJECT COMPLETED
PLAN ID.....: (AP-618A)(DU-0110) SOLID & HAZARDOUS WASTE MANAGEMENT
MANDATE.....: 10-05 RESOURCE CONSERVATION AND RECOVERY ACT
CURR. RESULTS: ID OF 12 DIFFERENT ORGANISMS. 10% LACTOSE IN 0000
LEACHATE SAMPLING PROTECTS BOTH GRAM (+) AND (-) 0000
ORGANISMS FROM GROWTH INHIBITING CHAR. OF LEACHATE. 0000
ORDIS CODES..: RECN-000932 SSIE-ZZ 752 EPA -R804733-02 TASK-C618A-7038
ORD -RC10C30-1078 LABN-C618A-0158 MAND-10-05
AP -618A DU -0110 LABT-ALM

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVES: THE OBJECTIVE OF THIS PROJECT IS TO DETERMINE THE HEALTH AND ENVIRONMENTAL SIGNIFICANCE OF THE PERSISTENCE OF FECAL STREPTOCOCCI FOUND IN LEACHATE FROM LANDFILLED MUNICIPAL REFUSE. THE PROJECT WILL CONSIST OF TWO PHASES. APPROACH: THE INITIAL PHASE WILL VERIFY MICROBIAL ANALYTICAL METHODS AND DETERMINE THE PRESENCE OF STUDY ORGANISMS IN A VARIETY OF LEACHATES. SAMPLES OF LEACHATE FROM DIFFERENT SOURCES OF LANDFILLED WASTE REPRESENTING DIFFERENT STAGES OF WASTE DECOMPOSITION (AGE OF LANDFILL) AND DIFFERENT OPERATIONAL CONDITIONS (BATCH VERSUS CONTINUOUS DISPOSAL, CONTROLLED VERSUS NATURAL MOISTURE INFILTRATION) WILL BE ASSAYED FOR MICROBIAL AND CHEMICAL CONTENT. MICROBIAL ASSAYS WILL INCLUDE TOTAL AEROBIC AND ANAEROBIC PLATE COUNTS, INDICATORS OF FECAL POLLUTION, SELECTED BACTERIAL PATHOGENS (E.G. SALMONELLA, SHIGELLA, KLEBSIELLA, AND MYCOBACTERIA) AND ANAEROBES (E.G. CLOSTRIDIA) AND THE MAJOR FUNGI OF PATHOGENIC SIGNIFICANCE. CHEMICAL ANALYSES WILL BE USED TO DESCRIBE THE LEACHATE ENVIRONMENT. THE SECOND PHASE WILL STUDY THE RELATIONSHIP BETWEEN THE EXTENT OF WASTE DECOMPOSITION AND THE MICROBIAL POPULATION DYNAMICS. THREE EXPERIMENTAL LANDFILLS (SPECIALLY CONSTRUCTED 55-GAL. DRUMS) CONTAINING MUNICIPAL REFUSE, MUNICIPAL REFUSE AND SEWAGE SLUDGE, AND HOSPITAL WASTE WILL BE CONSTRUCTED AND OPERATED AT 16" OF NET INFILTRATION PER YEAR. LEACHATES WILL BE ASSAYED BI-WEEKLY INITIALLY AND LESS FREQUENTLY AS THE RATE OF POPULATION CHANGES DECREASES. RESULTS TO DATE: THE FIRST PHASE HAS RESULTED IN IDENTIFICATION OF AT LEAST 12 DIFFERENT ORGANISMS. ADDITIONAL WORK IS UNDERWAY TO DETERMINE SPECIATION OF OTHER ISOLATES. PHASE 2 HAS BEEN INITIATED. THE USE OF 10% LACTOSE IN LEACHATE SAMPLING WAS FOUND TO PROTECT BOTH GRAM (POSITIVE) AND (NEGATIVE) ORGANISMS FROM THE GROWTH INHIBITING CHARACTERISTICS OF LEACHATE.

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LIST OF PROJECTS FROM MATCHED GRANT SYSTEM INPUT
* O R D I S D A T A E X T R A C T *

**PROJECT: 03708-RENEWAL OF WATER TEMPERATURE STUDIES AT THE USEPA MONTICELLO FIELD STATION

STARTING/ COMPLETION DATE : 09/76 - 03/78 : FUNDING : ESTIMATED - FY78 / $ 17500
TASK CODE=N608A-084 **EPA=R804736-01 ** (GRANT) PRIOR FY77 / $ 56700

EPA OFFICER.: KE HOKANSON EPA/ERL - DULUTH
INVESTIGATOR.: H STEFAN UNIV OF MINNESOTA DEPT OF CIV ENG
MILESTONES...: 04/77 -COMPLETE DEVELOPMENT OF PHYSICAL MODEL
09/77 -COMPLETE ALL FIELD MEASUREMENTS FOR VERIFICATION
03/78 -COMPLETE DRAFT FINAL REPORT
PLAN ID.....: (AP-608A)(DU-8115) FRESHWATER ECOLOGICAL PROCESSESS & EFFECTS
MANDATE.....: 20-99 A FIELD STATION, MONTICELLO, MN 0045
ORDIS CODES..: RECN-003708 SSIE-GMA 2508 3 EPA -R804736-01 TASK-N608A-084
ORD -RN10830-2078 MAND-20-99 AP -608A
DU -8115 LABT-MEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE MAIN OBJECTIVE OF THE STUDIES IS TO PROVIDE INFORMATION ON THE WATER TEMPERATURE REGIMES ENCOUNTERED IN EIGHT EXPERIMENTAL FIELD CHANNELS IN WHICH BIOLOGICAL EXPERIMENTS ARE CONDUCTED. HEATED WATER IS DISCHARGED THROUGH THESE CHANNELS AT LOW FLOW VELOCITIES. FIELD MEASUREMENTS OF WATER TEMPERATURES AND MATHEMATICAL MODELS ARE USED TO ACHIEVE THE OBJECTIVE. FIELD DATA ARE SUBJECTED TO STATISTICAL AND REGRESSION ANALYSIS TO GIVE INFORMATION ON LONGITUDINAL WATER TEMPERATURE GRADIENTS, DIURNAL WATER TEMPERATURE FLUCTUATIONS, VERTICAL STRATIFICATION, LONGITUDINAL DISPERSION, AND RATE OF SURFACE HEAT LOSS. CORRELATION WITH WEATHER PARAMETERS WILL BE PROVIDED. SOIL TEMP

**PROJECT: 01023-VIRUS-SOIL INTERACTIONS

STARTING/ COMPLETION DATE : 10/76 - 10/80 : FUNDING : ESTIMATED - FY78 / $ 0
TASK CODE=D607A-015 **EPA=R804743-01 ** (GRANT) PRIOR FY77 / $ 216500

EPA OFFICER.: EW AKIN EPA/HERL - CINC
INVESTIGATOR.: GW FUHS HLTH RES INC
GW FUHS STA DIV OF LABS/RES DEPT OF HLTH
R DEIBEL STA DIV OF LABS/RES DEPT OF HLTH
LF STURMAN STA DIV OF LABS/RES DEPT OF HLTH
MJ MULIN STA DIV OF LABS/RES DEPT OF HLTH
MM REDDY STA DIV OF LABS/RES DEPT OF HLTH
M CHEN STA DIV OF LABS/RES DEPT OF HLTH
TJ TOFFLEMIRE STATE DEPT OF ENV CONSRV
MILESTONES...: 05/78 -REPORT
10/78 -REPORT
10/79 -REPORT
10/80 -FINAL REPORT
PLAN ID.....: (AP-607A)(DU-B103) HEALTH EFFECTS: TREATMENT & DISPOSAL OF WASTEWATER & SLUDGE
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-001023 SSIE-GMA 3449 1 EPA -R804743-01 TASK-D607A-015
ORD -RD10830-1078 LABN-D607A-005 MAND-10-01
AP -607A DU -B103 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE PARAMETERS AFFECTING RETENTION AND INACTIVATION OF VIRUS IN SOILS WILL BE FURTHER DEFINED AND EVALUATED. GUIDELINES FOR THE PREDICTION OF VIRUS POLLUTION OF GROUNDWATER AND OTHER DRINKING WATER FROM RECHARGE WILL BE DEVELOPED AS FUNCTIONS OF VIRUS AND SOIL TYPES, THE COMPOSITION OF PERCOLATION MEDIUM, AND A VARIETY OF ORGANIC COMPONENTS, COATINGS, AND BIOLOGICAL FILMS. VIRUSES REPRESENTATIVE OF THE IMPORTANT BASIC TYPES OF ANIMAL VIRUSES (GLYCOPROTEIN-CONTAINING AND ICOSAHEDRAL TYPES) WILL BE UTILIZED IN ADSORPTION EXPERIMENTS OF THE BATCH AND COLUMN TYPES WITH RADIOACTIVE MEASUREMENTS OF LABELED VIRUS AND TESTS FOR INFECTIVITY AS INDICATORS OF VIRUS MOVEMENT AND INACTIVATION, RESPECTIVELY. EXPERIMENTS WILL BE CONDUCTED WITH PURE REFERENCE MINERALS, REFERENCE MINERALS WITH ORGANIC COATINGS, BIOLOGICAL FILMS MOSTLY CONSISTING OF BACTERIAL EXOPOLYMER, AND STERILE AND NATURAL SOILS OF SEVERAL CHARACTERISTIC TYPES. A NUMBER OF RELATED FACTORS SUCH AS ADSORPTION TO ORGANIC PARTICULATES PRIOR TO SOIL PERCOLATION, AND COMPLEX BIOLOGICAL INTERACTIONS WILL ALSO BE STUDIED.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
* OFFICE OF RESEARCH AND DEVELOPMENT *
LIST OF PROJECTS FROM MATCHED GRANT SYSTEM INPUT
* O R D I S D A T A E X T R A C T *

**PROJECT: 03561-SOUTHEAST FLORIDA OUTFALL STUDY

STARTING/ COMPLETION DATE : 11/76 - 10/78 : FUNDING : ESTIMATED - FY78 / $ 75000
TASK CODE=M608C-206 **EPA=R804749-01 ** (GRANT) PRIOR FY77 / $ 600000

EPA OFFICER.: F COLE
INVESTIGATOR.: SC SNEDAKER
MILESTONES...: 10/78 -FINAL REPORT
PLAN ID.....: (AP=608C)(DU=B115) MARINE & ESTUARINE ECOLOGICAL PROCESSESS & EFFECTS (IBA 608)
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
20-R04EPA REGION IV

EPA/ERL - CORVALLIS
UNIV OF MIAMI
MAR & ATMOS SCI/CHEM OCEANOGRAPHY

ORDIS CODES..: RECN-003561 SSIE-ZZ 277 EPA -R804749-01 TASK-M608C-206
ORD -RM10C30-5078 MAND-10-01 MAND-20-R04
AP -608C DU -B115 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH

ABSTRACT.....: OBJECTIVE: THIS PROJECT IS DESIGNED TO STUDY 1) THE DISPERSAL AND ACCUMULATION OF SEWAGE EFFLUENT DISCHARGED FROM AN OCEAN OUTFALL, 2) THE FATE OF SEWAGE-ASSOCIATED VIRUSES IN MARINE WATERS, 3) THE FACTORS WHICH CONTRIBUTE TO VIRUS SURVIVAL AND ACCUMULATION OR INACTIVATION, 4) THE IMPACT OF EFFLUENT SOLUTES AND PARTICULATES ON MARINE FISH AND INVERTEBRATES (PARTICULARLY CORAL), AND 5) THE RELATIVE SUCCESS OF PRESENT TREATMENT METHODS IN ELIMINATING SEWAGE-INDUCED STRESS ON MARINE BIOTA, AND IN ELIMINATING POTENTIALLY HAZARDOUS VIRAL ORGANISMS FROM OUTFALL EFFLUENTS. THE ANALYTICAL APPROACH WILL FOCUS ON RESULTS DERIVED FROM A LABORATORY SYSTEM IN WHICH EFFLUENT FROM A PILOT SEWAGE PLANT WILL BE METERED INTO AN ARRAY OF 100-GALLON AQUARIA. PARTICULATE DISTRIBUTION, BIOTIC RESPONSE, AND PATHOGEN FATE WILL BE MONITORED AS A FUNCTION OF EFFLUENT FLOW AND TREATMENT. LABORATORY RESULTS WILL BE COMPARED WITH RESULTS OF FIELD OBSERVATIONS TAKEN NEAR SELECTED OUTFALLS AND CONTROL AREAS ALONG THE SOUTHEAST FLORIDA COAST.

**PROJECT: 01642-THE CONTINUOUS MONITORING OF PARTICULATE SULFUR COMPOUNDS BY FLAME PHOTOMETRY

STARTING/ COMPLETION DATE : 08/76 - 10/79 : FUNDING : ESTIMATED - FY78 / $ 40000
TASK CODE=G6018-CA-21 **EPA=R804750-02 ** (GRANT) PRIOR FY77 / $ 29980

EPA OFFICER.: DJ REUTTER EPA/ESRL - RTP
INVESTIGATOR.: JJ HUNTZICKER OREGON GRADUATE CTR DEPT OF ENV TECH
MILESTONES...: 06/77 -FEASIBILITY STUDY COMPLETED
01/78 -BENCH SCALE INSTRUMENT SET UP -- PARAMETERS OPTIMIZED
06/78 -COMPONENTS OF FIELD INSTRUMENT ASSEMBLED
07/78 -FIELD INSTRUMENT ASSEMBLED AND LAB TESTED
07/78 -CONTINUATION PROPOSAL FOR ADDITIONAL FIELD EVAL, APPROVED
05/79 -DELIVER PROTOTYPE INSTRUMENT TO EPA, ERC, RTP
10/79 -FINAL REPORT
PLAN ID.....: (AP=6018)(OU=A105) TRANSPORTATION AIR POLLUTANTS EXPOSURE AND EFFECTS
MANDATE.....: 10-02 CLEAN AIR ACT
CURR. RESULTS: STUDIES ON FLASH VOLITILAZATION OF SULFATE COMPOUND 0030
DIFFUSION SCRUBBER FABRICATED AND PROVEN. 0030
ORDIS CODES..: RECN=001642 SSIE=GMA 3281 1 EPA =R804750-02 TASK=G6018-CA-21
ORD =RG10830-1078 LABN=G7128-CA-26 MAND=10-02
AP =6018 OU =A105 LABT=ALW

PROJ STATUS..: PROJECT=ACTIVE DATA=ORIGINAL CATEGORY=RESEARCH
ABSTRACT.....: OBJECTIVE: TO MAKE A DETAILED STUDY OF THE USE OF A FLAME PHOTOMETRIC DETECTOR FOR THE CONTINUOUS, IN SITU MEASUREMENT OF TOTAL PARTICULATE SULFUR AND THE SELECTIVE MEASUREMENT OF INDIVIDUAL SULFUR COMPOUNDS. APPROACH: THE TECHNIQUE IS BASED ON COUPLING A "DIFFUSION TUBE" SCRUBBER TO A VERY SENSITIVE FLAME PHOTOMETRIC DETECTOR. THE DIFFUSION TUBE SCRUBBER SERVES TWO PURPOSES: FIRST, ALL GASEOUS SULFUR COMPOUNDS ARE REACTED OUT TO PERMIT MEASUREMENT OF PARTICULATE SULFUR ONLY IN THE FLAME PHOTOMETRIC DETECTOR. SECOND, BY HEATING THE AEROSOL UPSTREAM OF THE DIFFUSION TUBE, INDIVIDUAL SULFUR COMPOUNDS CAN BE VAPORIZED OR DECOMPOSED TO GASES WHICH ARE SUBSEQUENTLY REMOVED BY THE DIFFUSION TUBE. THIS RESULTS IN A DECREASE IN THE FLAME PHOTOMETER OUTPUT OVER A TEMPERATURE RANGE WHICH IS SPECIFIC TO THE SULFUR COMPOUND BEING VAPORIZED OR DECOMPOSED. A DETECTION LIMIT OF APPROXIMATELY 2 MICROGRAMS/CUBIC METER SULFUR IS ACHIEVED BY ELECTRONIC SIGNAL AVERAGING THE DETECTOR OUTPUT. CURRENT PLANS/PROGRESS: STUDIES ON FLASH VOLATILIZATION OF SEVERAL SULFATE COMPOUNDS HAS BEEN COMPLETED. A DIFFUSION SCRUBBER WHICH EFFECTIVELY REMOVES SO2, H2S, CH3SH, AND CH3SSCH3 HAS BEEN FABRICATED AND PROVEN IN LABORATORY TESTS. THE IN SITU THERMOGRAMS OF HOMOGENEOUS AND HETEROGENEOUS MIXTURES OF H2SO4 - (NH4)2SO4, CASO4, NA2SO4, AND PBSO4 AEROSOLS HAVE BEEN EXTENSIVELY STUDIED AND THE RESPONSE OF THE FPD DETECTOR DETERMINED OVER A WIDE RANGE OF CONCENTRATIONS. THE COMPONENTS OF THE FINAL INSTRUMENT HAVE BEEN ASSEMBLED AND THE CRITICAL PARAMETERS, DETERMINED IN THE PREVIOUS STUDY, HAVE BEEN PROGRAMMED INTO THE PROM OF THE DEDICATED MICROCOMPUTER. WE PLAN AN ADDITIONAL YEAR OF FIELD TESTING AND INTERCOMPARISON WITH ESTABLISHED

>092<

**PROJECT: 00933-EVALUATION OF CANDIDATE INTERIM STANDARD LEACHING TEST

STARTING/ COMPLETION DATE : 06/77 - 10/78 : FUNDING : ESTIMATED - FY78 / $ 10000
TASK CODE=C618A-7039 **EPA=R804773-01 ** (GRANT) PRIOR FY77 / $ 40000

EPA OFFICER,: DE SANNING EPA/MERL - CINC
INVESTIGATOR,: R STANFORTH UNIV OF WISCONSIN COLL OF ENG
RK HAM UNIV OF WISCONSIN COLL OF ENG
M ANDERSON UNIV OF WISCONSIN COLL OF ENG
MILESTONES...: 07/78 -DRAFT FINAL REPORT
10/78 -FINAL REPORT PUBLISHED
10/78-EVALUATION OF THREE LEACHING TEST METHODS
PLAN ID.....: (AP-618A)(DU-D110) SOLID & HAZARDOUS WASTE MANAGEMENT
MANDATE.....: 10-05 RESOURCE CONSERVATION AND RECOVERY ACT
20-14 DAA FOR SOLID WASTE
ORDIS CODES..: RECN-000933 SSIE-ZZ 358 EPA -R804773-01 TASK-C618A-7039
ORD -RC10C30-5078 LABN-C618A-099 MAND-10-05
MAND-20-14 AP -618A DU -D110 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVE OF THIS AMENDMENT IS TO PROVIDE ADDITIONAL FUNDS TO COVER NECESSARY EFFORTS TO COMPLETE THE PROJECT. THESE EFFORTS WERE NOT ENVISIONED AT THE BEGINNING OF THE PROJECT, BUT THE IMPROVED PRODUCT WELL WARRANTS THE ADDITIONAL COST. THE CONTRACTOR HAS PERFORMED OVER AND ABOVE WHAT THE ORIGINAL GRANT CALLED FOR.

**PROJECT: 03144-EFFECTS OF LARGE-SCALE AGRICULTURAL LAND DEVELOPMENT ON DRAINAGE WATERS

STARTING/ COMPLETION DATE : 10/76 - 10/79 : FUNDING : ESTIMATED - FY78 / $ 58800
TASK CODE=K6178-429 **EPA=R804778-03 ** (GRANT) PRIOR FY77 / $ 106500

EPA OFFICER,: CN SMITH EPA/ERL - ATHENS
INVESTIGATOR,: RW SKAGGS UNIV OF NORTH CAROLINA BIOL/AGRIC ENG
JW GILLIAM UNIV OF NORTH CAROLINA BIOL/AGRIC ENG
TJ SHEETS UNIV OF NORTH CAROLINA BIOL/AGRIC ENG
MILESTONES...: 12/79 -FINAL REPORT PRESENTING RESULTS AND DATA FROM THIS PROJECT
PLAN ID.....: (AP-6178)(DU-) NONIRRIGATED CROP PRODUCTION
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-003144 SSIE-ZZ 323 EPA -R804778-03 TASK-K6178-429
ORD -RK10C30-1078 LABN-K770F-429 MAND-10-01
AP -6178 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVES ARE TO PROVIDE A DATA BASE AND ASSESSMENT METHODOLOGY TO ANALYZE AND MINIMIZE THE IMPACT OF "MEGA-FARMS" AS NONPOINT SOURCES OF NUTRIENTS, PESTICIDES, AND SEDIMENTS TO PRODUCTIVE COASTAL WATERS. THE OBJECTIVES ARE TO BE ACCOMPLISHED BY MONITORING DRAINAGE WATER QUANTITY AND QUALITY FROM THREE PAIRED FIELD SITES CONSISTING OF BOTH DEVELOPED AND UNDEVELOPED LAND ON THE FIRST COLONY (MEGA) FARM LOCATED ALONG THE EASTERN COAST OF NORTH CAROLINA. THE FARM IS LOCATED ON POORLY DRAINED SOILS IN THE HIGH-RAINFALL TIDEWATER PHYSIOGRAPHIC REGION. CHEMICAL ANALYSES ARE BEING CONDUCTED FOR PESTICIDES, PLANT NUTRIENTS, AND SEDIMENT IN RUNOFF FROM MINERAL, SHALLOW ORGANIC, AND MUCK SOILS. HYDROLOGIC AND CHEMICAL TRANSPORT MODELS FOR PREDICTING NUTRIENT, PESTICIDE, AND SEDIMENT MOVEMENT FROM THE LAND AND THROUGH DRAINAGE NETWORKS AS WELL AS PEAK RUNOFF RATES AND TOTAL RUNOFF WILL BE EVALUATED FOR THE TIDEWATER CONDITIONS AND ASSESSMENT OF MEGA-FARM ENVIRONMENTAL IMPACT. MODELS TO BE TESTED INCLUDE EPA'S AGRICULTURAL RUNOFF MANAGEMENT MODEL (ARM) AND A DRAINAGE MODEL (DRAINMOD) DEVELOPED BY NCSU. A FEASIBILITY STUDY WILL BE CONDUCTED TO LINK THESE MODELS TO PREDICT POLLUTANT TRANSPORT FROM THESE WATERSHEDS.

**PROJECT: 02699-EFFECTS OF SULFURIC ACID AEROSOL UPON RESPIRATORY FUNCTION IN NORMAL HUMAN SUBJECTS

STARTING/ COMPLETION DATE : 11/76 - 04/80 : FUNDING : ESTIMATED - FY78 / $ 450000
TASK CODE=H625F-7160 **EPA=R804803 ** (GRANT) PRIOR FY77 / $ 225744

EPA OFFICER.:	ED HAAK	EPA/HERL - RTP	
INVESTIGATOR.:	HD KERR	UNIV OF MARYLAND	DEPT OF MED
	ML MCILHANY	UNIV OF MARYLAND	DEPT OF MED
	P SWIDERSKY	UNIV OF MARYLAND	DEPT OF MED
	T KULLE	JOHNS HOPKINS UNIV	GEOG/ENV ENG DEPT
	D SWIFT	JOHNS HOPKINS UNIV	GEOG/ENV ENG DEPT
MILESTONES...:	06/78 -1ST PHASE CLINICAL STUDIES REPORTED		
	06/79 -2ND PHASE CLINICAL STUDIES REPORTED		
	06/80 -3RD PHASE CLINICAL STUDIES REPORTED		
PLAN ID.....:	(AP-625F)(DU-N140) AIR, WATER AND MULTI-ROUTE EXPOSURE & THEIR EFFECTS (HEALTH)		
MANDATE.....:	20-64 DAA FOR HEALTH AND ECOLOGICAL EFFECTS		
ORDIS CODES..:	RECN-002699	SSIE-GMA 3542 1	EPA -R804803 TASK-H625F-7160
	ORD -RH10830-2078	LABN-H625F-8160	MAND-20-64
	AP -625F	DU -N140	LABT-HEE
PROJ STATUS..:	PROJECT-ACTIVE	DATA-ORIGINAL	CATEGORY-RESEARCH

ABSTRACT.....: OBJECTIVES: TO DETERMINE THE EFFECTS OF LOW CONCENTRATION (100 MICROGRAMS/CUBIC METER) H2SO4 AEROSOL OF SMALL PARTICLE SIZE (0.1-0.3 MICRON M) ON THE MECHANICAL FACTORS OF BREATHING IN NORMAL HUMAN SUBJECTS. APPROACH: A MODIFIED DOUBLE-BLIND STUDY IS PLANNED. SUBJECTS WILL BE STUDIED IN PAIRS AND WILL SPEND 6 HOURS DAILY IN A CLASS 100 ENVIRONMENTALLY CONTROLLED CHAMBER ON 3 SUCCESSIVE DAYS. THEY WILL NOT BE TOLD WHICH DAY THE 4-HOUR EXPOSURE TO H2SO4 AEROSOL WILL OCCUR NOR WHICH 2 DAYS THEY WILL SIMPLY BREATHE FILTERED CLEAN AIR. PULMONARY FUNCTION TESTS WILL BE DONE IMMEDIATELY BEFORE ENTERING THE CHAMBER AND EVERY 2 HOURS THEREAFTER. OUTPUT: SMOKERS AND NON-SMOKERS WILL BE STUDIED. PULMONARY FUNCTION TESTS WILL INCLUDE THE FOLLOWING: (A) SPIROMETRY, (B) PLETHYSMOGRAPHIC DETERMINATION OF SPECIFIC AIRWAY CONDUCTANCE AND FRC, (C) CLOSING VOLUME AND NITROGEN PLATEAU, AND (D) DYNAMIC COMPLIANCE.

**PROJECT: 03023-MODELING TRANSPORT AND BEHAVIOR OF PESTICIDES AND OTHER TOXIC ORGANIC MATERIALS IN AQUATIC ENVIRONMENTS

STARTING/ COMPLETION DATE : 08/76 - 08/79 : FUNDING : ESTIMATED - FY78 / $ 153100
TASK CODE=K609A-310 **EPA=R804820-03 ** (GRANT) PRIOR FY77 / $ 112655

EPA OFFICER,: LA BURNS EPA/ERL - ATHENS
INVESTIGATOR,: RA PARK RENSSELAER POLY INST GEOLOGY DEPT
HF HERBRANDSON RENSSELAER POLY INST GEOLOGY DEPT
LS CLESCERI RENSSELAER POLY INST GEOLOGY DEPT
S ROSS RENSSELAER POLY INST GEOLOGY DEPT
WH SHUSTER RENSSELAER POLY INST GEOLOGY DEPT

MILESTONES...: 08/77 -ANN. RPT. #1 - INITIAL FORMULA. AND IMPLEMENT. OF PROCESS EQUATIO NS
09/77 -CLESCERL - STUDY OF BATCH SYSTEMS FOR MICROB. DEGRAD.
09/77 -HERBRANDSON - REPORT ON HYDROLYSIS CATALYSIS BY MISCELLES
05/78 -SARGENO - RPI SENIOR THESIS ON MALATHION COMETABOLISM
05/78 -LEUNG - RPI MS THESIS ON MODELING BIOACCUMULATION IN FISH
08/79 -USER MANUAL FOR COMPLETE MODEL OF TOXICS IN AQUATIC SYSTEM

PLAN ID.....: (AP=609A)(OU=8106) SOURCES, PROCESSES & SYSTEMS
MANDATE.....: 10-03 TOXIC SUBSTANCES CONTROL ACT
30-99 OGY 0024
CURR. RESULTS: SUBMODEL FOR BIOACCUMULATION IN FISHES COMPLETED. 0024
MANY PROCESS EQUATIONS IMPLEMENTED 0024
PRELIM. CODE AND USER MANUAL AVAILABLE. 0024

ORDIS CODES..: RECN=003023 SSIE-ZZ 344 EPA -R804820-03 TASK-K609A-310
ORD -RK10C30-5078 LABN-K7758-310 MAND-10-03
MAND-30-99 AP -609A OU -8106 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH

ABSTRACT.....: THE OBJECTIVE OF THIS PROJECT IS THE FORMULATION, IMPLEMENTATION AND TESTING OF A GENERALIZED MODEL REPRESENTING THE FUNCTIONAL CHARACTERISTICS OF TOXIC ORGANIC MATERIALS IN NATURAL AQUATIC ENVIRONMENTS. MATHEMATICAL REPRESENTATIONS OF PROCESSES OCCURRING IN THE ENVIRONMENT ARE BEING TESTED BY BENCH-SCALE LABORATORY STUDIES, WITH SUBSEQUENT SIMPLIFICATION OF THE DESCRIPTOR TO DELETE TERMS WITH DEMONSTRATED LACK OF SIGNIFICANCE, AND MODIFICATION TO CONNECT THE DESCRIPTOR TO KNOWN ENVIRONMENTAL PARAMETERS. THE PROCESS EQUATIONS ARE CONNECTED TO THE ECOSYSTEM MODEL CLEANER TO PROVIDE A FRAME FOR SIMULATION OF BEHAVIOR OF TOXIC MATERIALS IN THE ECOSYSTEM. THE COMPUTER MODEL WILL BE IMPLEMENTED FOR INTERACTIVE USE FROM REMOTE TERMINALS, AND A USER MANUAL WILL BE AVAILABLE TO THE PUBLIC. OTHER OUTPUTS INCLUDE PUBLICATIONS AND THESES ENGENDERED BY THE SUPPORTING RESEARCH AND A FINAL REPORT SUMMARIZING PROJECT RESULTS. A SUBMODEL FOR BIOACCUMULATION IN FISHES HAS BEEN COMPLETED AND VALIDATED. MANY OF THE PROCESS EQUATIONS HAVE BEEN IMPLEMENTED AND LINKED TO CLEANER IN PRELIMINARY FORM. THE PRELIMINARY CODE AND USER MANUAL ARE AVAILABLE FROM THE PROJECT MANAGERS.

2633

**PROJECT: 03959-ENVIRONMENTAL INFORMATION TRANSFER SYSTEM

STARTING/ COMPLETION DATE : 09/77 - 12/78 : FUNDING : ESTIMATED - FY78 / $ 56720
TASK CODE=S622C-10 **EPA=R804847-02 ** (GRANT) PRIOR FY77 / $ 43000

EPA OFFICER.: JE SMITH EPA/ERIC - CINC
INVESTIGATOR.: RC FITE OKLAHOMA STATE UNIV ARTS & SCI/CHEM DEPT
M GREGORY OKLAHOMA STATE UNIV ARTS & SCI/CHEM DEPT
MILESTONES...: 12/75 -ST PRESENTED TO ALL OKLAHOMA COM. ON SAFE DRINKING WATER ACT
09/76 -ANALYSIS OF AUDIENCE RESPONSE ON SDWA-ST
12/76 -ST PRESENTED TO ALL OKLAHOMA COM. ON LAND TREATMENT
03/77 -ST PREPARED ON 208-NPS POLLUTION
07/77 -ANALYSIS OF AUDIENCE RESPONSE ON LAND TREATMENT
12/77 -ANALYSIS OF AUDIENCE RESPONSE ON 208-NPS
06/78 -ARRANGEMENTS MADE FOR PRESENTATION ON IOWA AND SOUTH CAROLINA
PLAN ID.....: (AP-622C)(DU-H115) TECHNICAL INFORMATION PROGRAM
MANDATE.....: 20-80 OFFICE OF ADMINISTRATOR
CURR. RESULTS: RESULTS FROM 2 YRS EXPERIMENTS CONFIRM ALL HYPOTHOS 0052
ORDIS CODES..: RECN-003959 SSIE-ZZ 540 EPA -R804847-02 TASK-S622C-10
ORD -RS20840-2078 MAND-20-80 AP -622C
DU -H115 LAB1-MTS

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY- ADMIN/SPT.
COMMENT.....: THIS IS AN INFORMATION TRANSFER PROGRAM WHICH USES 0052
COOPERATIVE EXTENSION SERVICE TO TRANSFER PERTINENT 0052
ENV. INFO TO LOCAL DECISION MAKERS AND INT. CITIZEN 0052
ABSTRACT.....: OBJECTIVES: (1) TO SHARE THE RESULTS OF A TWO-YEAR DEMONSTRATION PROJECT IN OKLAHOMA "TO DEVELOP AND EVALUATE AN ENVIRONMENTAL TECHNOLOGY SYSTEM" WITH 10 EPA REGIONAL OFFICES AND WITH EXTENSION OFFICIALS OF AT LEAST ONE STATE IN EACH EPA REGION, (2) TO ENCOURAGE THE COOPERATIVE EXTENSION OFFICIALS IN OTHER STATES TO TRY THE OKLAHOMA MODEL, (3) TO EXPLORE THE POSSIBILITY OF A NATIONAL ENVIRONMENTAL EDUCATION PROGRAM BEING DEVELOPED WHICH IS BASED ON WELL-PREPARED SLIDE-TAPE PACKAGES BEING DISSEMINATED THROUGH THE NATION'S COOPERATIVE EXTENSION NETWORK. APPROACH: WHILE CONTINUING THE DISSEMINATION OF ENVIRONMENTAL INFORMATION THROUGH THE COOPERATIVE EXTENSION SERVICE IN OKLAHOMA, THE DIRECTOR OR HIS REPRESENTATIVE WILL VISIT EACH OF THE TEN EPA REGIONAL OFFICES AND PLAN A TRAINING SEMINAR FOR A SELECTED STATE IN EACH EPA REGION. A TEAM OF TWO PEOPLE WILL THEN CONDUCT A SEMINAR FOR THE BENEFIT OF THE HOST STATE AND ENCOURAGE THAT STATE TO TRY THE OKLAHOMA MODEL TO DISSEMINATE ENVIRONMENTAL INFORMATION TO THE PEOPLE. PROGRESS AND FUTURE PLANS: THE RESULTS FROM TWO YEARS OF EXPERIMENTATION CONFIRM ALL HYPOTHESES. EFFORTS WILL NOW BE MADE TO INTRODUCE TO OTHER STATES THE OKLAHOMA MODEL FOR DISSEMINATING ENVIRONMENTAL INFORMATION THROUGH THE COOPERATIVE EXTENSION SERVICES. EVALUATION OF ALL PHASES OF ACTIVITY WILL CONTINUE TO DETERMINE TO WHAT EXTENT THE OKLAHOMA MODEL IS ADAPTABLE IN OTHER STATES AND OTHER REGIONS.

2644

**PROJECT: 02701-THE EFFECT OF LOW LEVELS OF SULFURIC ACID MIST EXPOSURE ON HUMAN PULMONARY FUNCTION

STARTING/ COMPLETION DATE : 01/76 - 12/79 : FUNDING : ESTIMATED - FY78 / $ 449205
TASK CODE=M625F-7161 **EPA=R804853 ** (GRANT) PRIOR FY77 / $ 242231

EPA OFFICER.: ED HAAK EPA/HERL - RTP
INVESTIGATOR.: SM HORVATH UNIV OF CALIFORNIA INST FOR ENV STRESS
LJ FOLINSBEE UNIV OF CALIFORNIA INST FOR ENV STRESS
JF BEDI UNIV OF CALIFORNIA INST FOR ENV STRESS
MILESTONES...: 06/78 -1ST ANNUAL REPORT ON HUMAN STUDIES
06/79 -2ND ANNUAL REPORT ON HUMAN STUDIES
06/80 -3RD ANNUAL REPORT ON HUMAN STUDIES
PLAN ID.....: (AP-625F)(DU-N140) AIR, WATER AND MULTI-ROUTE EXPOSURE & THEIR EFFECTS (HEALTH)
FINAL OUTPUT.: EFFECTS OF ACID AEROSOL EXPOSURE IN MAN, 0012
MANDATE.....: 20-64 DAA FOR HEALTH AND ECOLOGICAL EFFECTS
ORDIS CODES..: RECN-002701 SSIE-GMA 4324 1 EPA -R804853 TASK-M625F-7161
ORD -RH10830-2078 LABN-M625F-8161 MAND-20-64
AP -625F OU -N140 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVE: THE AIM OF THIS INVESTIGATION IS TO EXAMINE THE EFFECTS OF ACUTE EXPOSURE TO H2SO4 MIST IN HUMANS AND SOME OF THE FACTORS AFFECTING TOXICITY - TEMPERATURE, HUMIDITY, AND DURATION OF EXPOSURE. APPROACH: THE SUBJECTS WILL BE EXPOSED IN AN ENVIRONMENTAL CHAMBER TO EITHER FILTERED AIR ,20 MG/CUBIC METER OR ,40 MG/M CUBIC METER OF H2SO4 UNDER FOUR CONDITIONS OF TEMPERATURE AND HUMIDITY: 18 DEGREES C, 45% RH; 35 DEGREES C, 85% RH; 35 DEGREES C, 45% RH; AND 35 DEGHEES C, 88% RH. SUBJECTS WILL EXERCISE INTERMITTENTLY AT 25% OF THEIR MAXIMUM CAPACITY DURING THE EXPOSURE PERIOD. PULMONARY FUNCTION TESTS WILL BE PERFORMED BEFORE, DURING, AND AFTER THE EXPOSURE. SOME ASPECTS OF CARDIOVASCULAR PERFORMANCE WILL BE ASSESSED DURING THE EXPOSURE EXERCISE PERIODS. OUTPUT: THE FINAL REPORT OF THIS STUDY WILL PROVIDE THE AGENCY WITH IMPORTANT INFORMATION ON THE EFFECTS OF ACID AEROSOL EXPOSURE IN

**PROJECT: 00044-A PARAMETRIC ASSESSMENT AND OPTIMIZATION OF VOLATILE ORGANIC ANALYSIS METHODS

STARTING/ COMPLETION DATE : 10/76 - 10/78 : FUNDING : ESTIMATED - FY78 / $ 29969
TASK CODE=A614E-16 **EPA=R804864-01 ** (GRANT) PRIOR FY77 / $ 24658

EPA OFFICER.: JJ LICHTENBERG EPA/EMSL - CINC
INVESTIGATOR.: RC HOEHN VA POLY INST/STATE UNIV SCH OF ENG
CW RANDALL VA POLY INST/STATE UNIV SCH OF ENG
MILESTONES...: 10/77 -REPORT: OPTIMIZED PURGE AND TRAP METHOD FOR VOLATILE ORG.
10/78 -FINAL REPORT OF ORIGINAL SCOPE OF WORK AND ADDED COMPOUNDS
PLAN ID.....: (AP-614E)(DU-C110) WATER SUPPLY - IDENTIFICATION & MEASUREMENT
MANDATE.....: 10-13 SOLID WASTE DISPOSAL ACT
ORDIS CODES..: RECN-000044 SSIE-GMA 3425 1 EPA -R804864-01 TASK-A614E-16
ORD -RA10830-1078 MAND-10-13 AP -614E
DU -C110 LABT-MTS

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVES OF THIS PROJECT ARE: 1) TO DETERMINE THE APPLICABILITY OF THE BELLAR-LICHTENBERG METHODS FOR VOLATILE ORGANICS ANALYSIS (VOA) IN WATER TO A VARIETY OF TYPES OF COMPOUNDS AND 2) TO INVESTIGATE THE VARIATIONS IN ANALYTICAL PRECISION THAT ARE INDUCED BY MODIFICATIONS IN THE HARDWARE, SOFTWARE, AND SAMPLE-HANDLING PROCEDURES. VARIABLES TO BE INVESTIGATED INCLUDE: 1) SAMPLE SIZE, CONTAINER TYPE, AND THE PRESENCE OF HEAD SPACE; 2) TEMPERATURES AND TIMES OF STORAGE; 3) METHODS OF SPARGING SAMPLES, TRAPPING EFFICIENCIES, AND DESORPTION METHODS; AND 4) INSTRUMENTATION VARIABLES SUCH AS COLUMN PACKING, COLUMN GEOMETRY, HEATING RATE, AND GAS FLOW RATE. ONCE AN OPTIMUM PROCEDURE FOR SAMPLING, HANDLING, AND ANALYSIS HAS BEEN DEVISED, ITS APPLICABILITY TO A VARIETY OF TYPES OF ORGANIC COMPOUNDS WILL BE INVESTIGATED. GROUPS OF COMPOUNDS TO BE STUDIED INCLUDE ETHERS, ALCOHOLS, MERCAPTANS, AMINES, ESTERS, NITRILES, AND A VARIETY OF AROMATICS, INCLUDING SIMPLE, COMPLEX, HALOGENATED, AND CONJUGATED TYPES. THE PROJECT IS TO BE DEVELOPMENTAL IN NATURE AND IS DESIGNED FOR A TWO YEAR PERIOD. THE WORK WILL BE ENTIRELY BENCH-SCALE EXPERIMENTATION, AND THE RESULTS WILL BE STATISTICALLY ANALYZED IN AN ATTEMPT TO IDENTIFY THOSE VARIABLES THAT SIGNIFICANTLY AFFECT THE RESULTS OF THE VOA. THIS WORK WILL IDENTIFY AREAS REQUIRING ADDITIONAL RESEARCH, AND HOPEFULLY BE INSTRUMENTAL IN DEVISING A STANDARD METHOD FOR THE SAMPLING, HANDLING AND ANALYSIS OF VOLATILE ORGANIC COMPOUNDS THAT MAY POSSIBLY BE IN DRINKING WATER.

**PROJECT: 01078-QUANTITATION OF THE DESORPTION AND RECOVERY OF VIABLE BACTERIA FROM SEDIMENT AND PARTICULATE MATTER IN THE OCEAN
STARTING/ COMPLETION DATE : 10/78 - 10/79 : FUNDING : ESTIMATED - FY78 / $ 35484
TASK CODE=D607C-036 **EPA-R804865-03 ** (GRANT) PRIOR FY77 / $ 57600

EPA OFFICER.: AP DUFOUR EPA/MERL - CINC
INVESTIGATOR.: CO LITCHFIELD UNIV OF SO CALIF
M SCHERAGA UNIV OF SO CALIF
M MESKILL UNIV OF SO CALIF
PLAN ID.....: (AP-607C)(DU-8103) WATER QUALITY HEALTH EFFECTS: CRITERIA FOR RECREATIONAL & SHELLFISH-GROWING WATERS
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
20-20 AA FOR AIR AND WASTE MANAGEMENT
CURR. RESULTS: REPRODUCIBILITY & PRECISION OF METHOD ARE NOW 0003
UNDER EVAL. 0003
ORDIS CODES..: RECN-001078 SSIE-ZZ 726 EPA -R804865-03 TASK-D607C-036
ORD -RD10C30-5078 MAND-10-01 MAND-20-20
AP -607C DU -8103 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVES OF THIS RESEARCH ARE TO EVALUATE PRESENTLY AVAILABLE METHODS FOR THE RECOVERY OF VIABLE BACTERIA FROM PARTICULATE MATTER AND TO EVALUATE VARIOUS MEANS FOR CONCENTRATING PARTICULATES FROM SEA WATER. THE APPROACH IS TO DEVELOP AND EVALUATE THESE TECHNIQUES IN THE LABORATORY USING MODEL SYSTEMS COMPOSED OF PURE OR MIXED BACTERIAL CULTURES AND STERILIZED, NATURAL SEDIMENTS. PHYSICAL TECHNIQUES (SHAKING, SONICATION, AND BLENDING) AS WELL AS CHEMICAL MODIFICATION OF THE SUSPENDING MENSTRUM (PH, SALINITY, OSMOTIC PRESSURE, AND SURFACTANTS) WILL BE EVALUATED. THE MOST PROMISING MEASURES WILL THEN BE TESTED UNDER FIELD CONDITIONS FOR THEIR SENSITIVITY, RELIABILITY, AND SELECTIVITY. NATURAL HETEROTROPHIC POPULATIONS IN SEDIMENTS AS WELL AS COLIFORMS WILL BE EXAMINED. EVALUATION OF RECOVERY METHODS WILL INCLUDE ATP, SURFACE SPREAD PLATE, EPIFLUORESCENCE MICROSCOPY, LIMULUS TESTING, FLUORESCENT ATIBODY, AND MPN. THESE LATTER TWO PROCEDURES WILL BE USED FOR COLIFORM RECOVERY EVALUATIONS. DEVELOPMENTS SO FAR WITH MODEL LABORATORY SYSTEMS INDICATE THAT SHORT BURSTS IN A BLENDER (10 SECS. FOLLOWED BY 5 SEC. REST FOR A TOTAL BLENDING TIME OF 60 SEC.) WHEN PERFORMED IN A CYSTINE-TWEEN 80-CETYL-TRIMETHYLAMMONIUM BROMIDE BUFFER PROVIDES THE BEST RECOVERY RATE (UP TO AN ORDER OF MAGNITUDE DEPENDING ON THE TEST ORGANISM). THE REPRODUCIBILITY AND PREC

**PROJECT: 03021-IMPACTS OF SEDIMENTS AND NUTRIENTS ON BIOLOGICAL RESOURCES IN SURFACE WATERS OF THE UNITED STATES

STARTING/ COMPLETION DATE : 09/76 - 03/79 : FUNDING : ESTIMATED - FY78 / $ 1600
TASK CODE=K609A-309 **EPA=R804868-02 ** (GRANT) PRIOR FY77 / $ 200070

EPA OFFICER.: DL BROCKWAY EPA/ERL - ATHENS
INVESTIGATOR.: FB GULLEY UNIV OF GEORGIA
JL COOLEY UNIV OF GEORGIA
EG FARNWORTH UNIV OF GEORGIA

MILESTONES...: 04/79 -FINAL REPORT: KNOWLEDGE OF SEDIMENTS AND NUTRIENTS IMPACT ON BIO
PLAN ID.....: (AP-609A)(DU-B106) SOURCES, PROCESSES & SYSTEMS
FINAL OUTPUT.: REPORT ON STATE OF KNOWLEDGE ON IMPACTS OF 0024
SEDIMENTS AND NUTRIENTS ON BIOTA IN SURFACE WATERS 0024
MANDATE.....: 30-99 MENTS & NUTRIENTS 0024
CURR. RESULTS: REVIEW PAPER COMPLETED 0024
ORDIS CODES..: RECN-003021 SSIE-GMA 3229 2 EPA -R804868-02 TASK-K609A-309
ORD -RK10B30-307A LABN-K775B-309 MAND-30-99
AP -609A DU -B106 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OJECTIVE OF THIS STUDY IS TO ASSESS THE STATE OF KNOWLEDGE ON IMPACTS OF SEDIMENTS AND NUTRIENTS ON BIOTA IN SURFACE WATERS OF THE UNITED STATES, INDICATE GAPS IN THAT KNOWLEDGE, AND SUGGEST RESEARCH FOR THE FUTURE. THIS WILL BE ACCOMPLISHED BY PREPARING A SET OF REVIEW PAPERS AND THEN USING HIERARCHICAL MODELING WITH MATRICES TO IDENTIFY MISSING INFORMATION IN PARTICULAR AREAS. THE FINAL OUTPUT WILL BE A REPORT ON THE STATE OF KNOWLEDGE ON IMPACTS OF SEDIMENTS AND NUTRIENTS ON BIOTA IN SURFACE WATERS OF THE UNITED STATES WITH SUGGESTIONS FOR RESEARCH TO FILL IN GAPS IN THAT KNOWLEDGE. A REVIEW PAPER HAS BEEN COMPLETED, "IMPACT OF SEDIMENTATION ON AQUATIC BIOTA - REVIEW OF LITERATURE SURVEYED."

**PROJECT: 01470-ASSESSMENT AND CONTROL OF WASTEWATER CONTAMINANTS ORIGINATING FROM THE PRODUCTION OF SYNTHETIC FUELS FROM COAL
STARTING/ COMPLETION DATE : 11/76 - 10/81 : FUNDING : ESTIMATED - FY78 / $ 483614
TASK CODE=F623A-91 **EPA=R804917 ** (GRANT) PRIOR FY77 / $ 313000

EPA OFFICER,: TM PETKIE EPA/IERL - RTP
INVESTIGATOR,: PC SINGER UNIV OF NORTH CAROLINA SCH OF PUBLIC HLTH
FK PFAENDER UNIV OF NORTH CAROLINA SCH OF PUBLIC HLTH
JC LAMB UNIV OF NORTH CAROLINA SCH OF PUBLIC HLTH
RF CHRISTMAN UNIV OF NORTH CAROLINA SCH OF PUBLIC HLTH
AF MACIOROWSKI UNIV OF NORTH CAROLINA SCH OF PUBLIC HLTH

MILESTONES...: 01/78 -LITERATURE REVIEW COMPLETED
06/78 -SYNTHETIC WASTEWATER TREATED BY ACTUATED SLUDGE
12/78 -PHYSICAL/CHEMICAL PRETREATMENT OPTIMIZED
06/79 -COMPONENT BIODEGRADABILITY DETERMINED
12/79 -PRELIMINARY BIOASSAY RESULTS AVAILABLE
06/80 -COMPOSITE BIODEGRADABILITY DETERMINED
12/80 -ACTUAL WASTEWATER TREATED BY ACTIVATED SLUDGE
09/81 -TREATMENT SCHEMES TESTED ON ACTUAL WASTEWATER
11/81 -DESIGN CRITERIA RECOMMENDED

PLAN ID.....: (AP=623A)(DU=N105) FUEL PROCESSING
ORDIS CODES,.: RECN=001470 SSIE-GMA 4821 1 EPA -R804917 TASK-F623A-91
AP -623A DU -N105 LABT-EMI
PROJ STATUS,.: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY- UNKN

ABSTRACT.....: THE PURPOSE OF THIS PROJECT IS TO ASSESS THE ENVIRONMENTAL IMPACT OF WASTEWATER CONTAMINANTS ORIGINATING FROM THE PRODUCTION OF SYNTHETIC FUELS FROM COAL AND TO EVALUATE ALTERNATIVE WASTEWATER TREATMENT TECHNOLOGIES FOR THE CONTROL OF THESE CONTAMINANTS. THE PHASES OF THE PROJECT ARE: 1) A LITERATURE REVIEW AND SURVEY OF PILOT AND FULL-SCALE COAL CONVERSION FACILITIES TO IDENTIFY SPECIFIC CONTAMINANTS IN THE WASTEWATERS; 2) A STUDY OF THE BIODEGRADABILITY OF SELECTED ORGANIC CONSTITUENTS FROM SUCH WASTEWATERS INCLUDING AQUATIC BIOASSAYS ON SELECTED RESIDUALS; 3) BIOLOGICAL AND PHYSICAL-CHEMICAL TREATABILITY STUDIES OF SELECTED ORGANIC CONSTITUENTS AND IDENTIFICATION OF THE RESIDUALS; 4) ANIMAL TOXICOLOGY STUDIES TO EVALUATE POTENTIAL HEALTH EFFECTS OF COMPONENTS NOT STUDIED IN SUFFICIENT DETAIL ELSEWHERE; AND 5) TREATABILITY STUDIES OF COMPOSITE SYNTHETIC AND REAL COAL PROCESSING WATERS. REPORTS AND PAPERS WILL RESULT FROM THIS STUDY THROUGHOUT ITS DURATION. EPA WILL USE THEM, ESPECIALLY FOR DETERMINING EFFLUENT GUIDELINES. THE FINAL OUTPUT FROM THE PROJECT WILL BE DESIGN CRITERIA FOR CONTINUOUS TREATMENT OF COAL CONVERSION WASTEWATERS. THESE CRITERIA WILL REPRESENT THE VIEW OF A DISINTERESTED EXPERT ADVISING PROCESS DEVELOPERS ABOUT EFFECTIVE TREATMENT SCHEMES. A THOROUGH REVIEW OF THE LITERATURE AND DISCUSSIONS WITH COAL CONVERSION PROCESS DEVELOPERS HAVE RESULTED IN SPECIFICATION OF A SYNTHETIC WASTEWATER COMPOSITION. IT MODELS REAL WASTEWATERS IN MAJOR COMPOUNDS AND THEIR CONCENTRATIONS. THIS WASTEWATER HAS BEEN USED TO ACCLIMATE MICROORGANISMS FOR UPCOMING COMPONENT BIODEGRADABILITY WORK. AT 25% STRENGTH, IT WAS THE FEED TO ACTIVATED SLUDGE REACTORS FOR RETENTION TIME AND HYDRAULIC LOADING EXPERIMENTS.

**PROJECT: 01900-A NUMERICAL STUDY OF HALOCARBON CHEMICAL REACTION ON STRATOSPHERIC &
TROPOSPHERIC OZONE & OTHER PHOTOCHEMICAL PROCESSES (ABBREV)
STARTING/ COMPLETION DATE : 11/76 - 10/78 : FUNDING : ESTIMATED - FY78 / $ 56440
TASK CODE=G603A-AI-06 **EPA=R804921-02 ** (GRANT) PRIOR FY /

EPA OFFICER,: P HANST EPA/ESRL - RTP
INVESTIGATOR,: PJ CRUTZEN COLORADO STATE UNIV AGRIC ENG DEPT
J FISHMAN COLORADO STATE UNIV AGRIC ENG DEPT
RB CHATFIELD COLORADO STATE UNIV AGRIC ENG DEPT
MILESTONES...: 10/81 -FINAL REPORT
PLAN ID.....: (AP-603A)(DU-A125) ATMOSPHERIC PROCESSES AND EFFECTS
MANDATE.....: 10-02 CLEAN AIR ACT
ORDIS CODES..: RECN-001900 SSIE-GMA 3443 1 EPA -R804921-02 TASK-G603A-AI-06
ORD -RG10830-1078 LABN-G603A-AP-08 MAND-10-02
AP -603A DU -A125 LABT-ALM

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE PURPOSE OF THIS RESEARCH IS TO OBTAIN AN UNDERSTANDING OF THE MODIFICATION OF THE ATMOSPHERE CAUSED BY THE RELEASE OF HALOGENATED CHEMICALS. TO ACCOMPLISH THIS GOAL, NUMERICAL MODELS OF THE ATMOSPHERE HAVE BEEN AND WILL BE FURTHER DEVELOPED WHICH ACCURATELY DESCRIBE THE PHOTOCHEMICAL AND PHYSICAL PROCESSES OCCURRING IN THE ATMOSPHERE. RESEARCH CONDUCTED DURING THE FIRST YEAR HAS INDICATED THAT THE CLEAN TROPOSPHERE MAY NOT BE AS EFFICIENT A SCAVENGER OF HALOCARBONS AS PREVIOUSLY BELIEVED. AN UNDERSTANDING OF THE ROLE OF THE TROPOSPHERE AS A REMOVAL MECHANISM FOR THESE HALOGENATED COMPOUNDS CAN BE BETTER ACHIEVED IF A GOOD KNOWLEDGE OF THE TROPOSPHERIC CARBON MONOXIDE BUDGET IS OBTAINED. THUS, ALTHOUGH THE CO BUDGET IS DISCUSSED IN THE FIRST YEAR'S RESEARCH RESULTS, THE SECOND YEAR'S RESEARCH EFFORTS WILL CONCENTRATE ON MINIMIZING THE UNCERTAINTIES OF THIS BUDGET DUE TO SOIL ABSORPTION AND RELEASE AND NON-METHANE HYDROCARBON OXIDATION. THE OTHER MAJOR FACET OF THE SECOND YEAR'S RESEARCH WILL BE TO HAVE A TWO-DIMENSIONAL, TIME-DEPENDENT, GLOBAL SCALE, PHOTOCHEMICAL MODEL (INCLUDING CHLOROCARBONS) OF THE TROPOSPHERE AND STRATOSPHERE OPERATIONAL BY THE END

**PROJECT: 03148-EFFECTIVENESS OF SOIL AND WATER CONSERVATION PRACTICES FOR POLLUTION
CONTROL
STARTING/ COMPLETION DATE : 10/76 - 10/78 : FUNDING : ESTIMATED - FY78 / $ 163000
TASK CODE=K6178-431 **EPA=R804925 ** (GRANT) PRIOR FY77 / $ 260000

EPA OFFICER,: LA MULKEY UNKNOWN OFFICE
INVESTIGATOR,: RC LOEHR CORNELL UNIV/ITHACA CAMPUS NY STATE COLL OF AGRIC & LIFE
DH HAITH CORNELL UNIV/ITHACA CAMPUS NY STATE COLL OF AGRIC & LIFE
MILESTONES...: 11/77 -INTERIM REPORT
11/78 -REPORT ON COST-EFFECTIVENESS OF EROSION CONTROLS
07/79 -ECONOMIC REPORT ON BMP IMPLEMENTATION
PLAN ID.....: (AP-6178)(DU-) NONIRRIGATED CROP PRODUCTION
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-003148 SSIE-ZZ 324 EPA -R804925 TASK-K6178-431
ORD -RK10C30-1078 ORD -K7708-431 MAND-10-01

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-UNKN CODE
ABSTRACT.....: A COMPREHENSIVE ENGINEERING AND ECONOMIC ANALYSIS OF CLASSICAL SOIL AND WATER CONSERVATION PRACTICES FOR THEIR EFFECTIVENESS IN CONTROL OF WATER QUALITY WILL BE COMPLETED. SIMULATION MODELS, EXISTING DATA BASES, AND ECONOMIC ANALYSIS (E.G., LINEAR PROGRAMMING) WILL BE USED FOR A SELECTION OF AGRICULTURAL COMPLEXES IN SEVERAL GEOGRAPHICAL LOCATIONS.

**PROJECT: 02315-SIMS THREE YEAR STUDY ON STATISTICS AND ENVIRONMENTAL FACTORS IN HEALTH

STARTING/ COMPLETION DATE : 10/76 - 10/79 : FUNDING : ESTIMATED - FY78 / $ 80000
TASK CODE=H601C-7214 **EPA=R804932-02 ** (GRANT) PRIOR FY77 / $ 145000

EPA OFFICER.: WC NELSON EPA/HERL - RTP
INVESTIGATOR.: LE MOSES STANFORD UNIV STATISTICS DEPT
TM SAGER STANFORD UNIV STATISTICS DEPT
MILESTONES...: 11/79 -FINAL REPORT
PLAN ID.....: (AP=601C)(DU=A105) REFINEMENT OF HEALTH INFORMATION ON AIR POLLUTANTS
MANDATE.....: 30-99 ISTICS 0001
CURR. RESULTS: SIMS - 1ST ISSUE OF NEWS OF 3-YR STUDY ON STATISTIC 0001
ENV. FACTORS IN HEALTH. COLUMBIA - 4 PAPERS 0001
STANFORD - 8 TECH REPORTS AND 5 WORKING PAPERS 0001
ORDIS CODES..: RECN=002315 SSIE=ZZ 473 EPA =R804932-02 TASK=H601C-7214
ORD =RH10C30-3078 LABN=H601C-82141 MAND=30-99
AP =601C DU =A105 LABT=HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: SIMS WILL CONTINUE TO COORDINATE THE STUDY WITH RESPECT TO PUBLICATION AND COMMUNICATION AND WILL ALSO MAINTAIN APPROPRIATE LIAISON WITH THE REVIEW PANEL. THE OBJECT OF THE COLUMBIA UNIVERSITY GROUP IS TO DEVELOP STATISTICAL METHODS AND MODELS FOR DESCRIBING THE EFFECTS OF THE ENVIRONMENT, MEASURED BY POLLUTION AND WEATHER VARIABLES, ON RESPIRATORY DISEASES. WORK IN THE FOLLOWING AREAS IS UNDER WAY: ALTERNATIVES TO MULTIPLE REGRESSION, TIME SERIES MODELS, METHODS FOR DETECTING CLUSTERS OF CASES, MEASURING POLLUTION LEVELS FOR AN ENTIRE GEOGRAPHIC AREA, AND THE ASSOCIATION BETWEEN AIR POLLUTION AND MORTALITY. THE STANFORD UNIVERSITY GROUP HAS BEEN INVESTIGATING THE TIME AND SPACE VARIABILITY OF POLLUTANT CONCENTRATIONS. TOPICS OF INVESTIGATION HAVE INCLUDED MAXIMUM CONCENTRATION OF A POLLUTANT CONCENTRATION TIME SERIES AS RELATED TO THE MAXIMUM OF A SUBSERIES, SPATIAL AUTOCORRELATION OF STATIONS, RELATION OF GEOGRAPHIC DISTRIBUTION OF A MORTALITY OR MORBIDITY INDEX TO THE DISTRIBUTION OVER THE SAME GEOGRAPHIC REGION OF AN INDEX OF AIR POLLUTION. THE FOLLOWING RESULTS TO DATE ARE NOTED: SIMS - FIRST ISSUE OF NEWS OF THE SIMS THREE YEAR STUDY ON STATISTICS AND ENVIRONMENTAL FACTORS IN HEALTH. COLUMBIA - FOUR PAPERS RELATING TO THE WORK DESCRIBED ABOVE UNDER "COLUMBIA". STANFORD - EIGHT TECHNICAL REPORTS AND FIVE WORKING PAPERS RELATED TO THE WORK DESCRIBED ABOVE UNDER "STANFORD".

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
* OFFICE OF RESEARCH AND DEVELOPMENT *
LIST OF PROJECTS FROM MATCHED GRANT SYSTEM INPUT
* O R D I S D A T A E X T R A C T *

**PROJECT: 03738-KINETIC STUDIES OF DECOMPOSITION AND NUTRIENT REGENERATION OF GREAT LAKES PHYTOPLANKTON

STARTING/ COMPLETION DATE : 10/76 - 05/80 : FUNDING : ESTIMATED - FY78 / $ 50000
TASK CODE=N608A-110 **EPA=R804937-02 ** (GRANT) PRIOR FY77 / $ 85000

EPA OFFICER.: VJ BIERMAN
EPA/EHL - DULUTH
INVESTIGATOR.: JV DEPINTO
CLARKSON COLLEGE OF TECH SCH OF ENG/CIV & ENV ENG
MILESTONES...: 05/80 -FINAL REPORT
PLAN ID.....: (AP-608A)(DU-8115) FRESHWATER ECOLOGICAL PROCESSESS & EFFECTS
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-003738 SSIE-GMA 4507 1 EPA -R804937-02 TASK-N608A-110
ORD -RN10830-1078 LABN-N769 -027 MAND-10-01
AP -608A DU -8115 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH

ABSTRACT.....: THE OBJECTIVE OF THIS PROJECT IS TO PROVIDE KINETIC EXPERIMENTAL DATA FOR THE DEVELOPMENT OF A MECHANISTIC SUBMODEL TO DESCRIBE THE DECOMPOSITION AND NUTRIENT REGENERATION OF ALGAL BLOOMS IN NATURAL WATERS. TO ACCOMPLISH THIS GOAL INVOLVES THE DETERMINATION OF THE RATE OF AEROBIC DECOMPOSITION OF PHYTOPLANKTON AS A FUNCTION ALGAL SPECIES, THE PHYSIOLOGICAL CHARACTERISTICS OF THE ALGAL POPULATION, DISTINGUISHING CHARACTERISTICS OF THE DECOMPOSER POPULATION, AND THE LIGHT AND TEMPERATURE REGIME. THE PHOSPHORUS AND NITROGEN DYNAMICS ASSOCIATED WITH THE PROCESS OF DECAY OF ALGAE WILL ALSO BE INVESTIGATED. FINALLY, THE SIGNIFICANCE OF MICROBIAL DECOMPOSER POPULATIONS IN CAUSING THE DECLINE OF ALGAL BLOOMS IN LAKES WILL BE STUDIED. LABORATORY WORK WILL BE EMPLOYED IN MEETING THE ABOVE OBJECTIVES. THE STUDIES WILL INCLUDE THE USE OF: (1) TWO-STAGE CHEMOSTATS (ONE IN LIGHT AND ONE IN DARK) TO SIMULATE THE TWO REGIONS IN A WATER COLUMN IN WHICH EITHER PHYTOPLANKTON GROWTH OR DECAY PREDOMINATES, AND (2) A CULTURE APPARATUS WHICH ALLOWS THE CULTURE OF DIFFERENT MICROORGANISM POPULATIONS IN THE SAME LIQUID MEDIUM WITHOUT CROSS-CONTAMINATION IN ORDER TO MEASURE GROSS NUTRIENT REGENERATION.

**PROJECT: 03257-CHAMBERS WORKS WASTEWATER TREATMENT PLANT - REMOVAL OF ORGANIC AND ORGANO-NITROGEN COMPOUNDS FROM WASTEWATER
STARTING/ COMPLETION DATE : 11/76 - 11/79 : FUNDING : ESTIMATED - FY78 / $ 99000
TASK CODE=L6108-19 **EPA=S804943-03 ** (GRANT) PRIOR FY / $ 286000

EPA OFFICER,: JE MATTHEWS EPA/ERL - ADA
INVESTIGATOR,: HW HEATH DU PONT DE NEMOURS & CO
MILESTONES,..: 11/76 -BEGAN STARTUP OF "PACT" SYSTEM
03/77 -"PACT" SYSTEM ON LINE
09/77 -REPORT ON STARTUP OF "PACT" SYSTEM
11/79 -COMPLETE PROJECT REPORT ON OPERATION OF PACT SYSTEM
PLAN ID.....: (AP-6108)(DU-8118) MATERIALS PROCESSING, INDUSTRIAL PT. SOURCES (WATER)
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
CURR. RESULTS: AERATOR/CLARIFIER SYSTEM HAS BEEN TREATING 28000 G 0033
SINCE 6/77, REGENERATION FURNACE CURRENTLY OPERATI 0033
70% CAPACITY, MODIFICATION OF SYSTEM CONTINUING. 0033
ORDIS CODES,.: RECN-003257 SSIE-ZZ 556 EPA -S804943-03 TASK-L6108-19
ORD -RL10C30-1078 LABN-L6108-46 MAND-10-01
AP -6108 DU -8118 LABT-ALM

PROJ STATUS,.: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVE OF THIS PROJECT IS TO OBTAIN ACTUAL OPERATING AND COST DATA FROM A LARGE SCALE INDUSTRIAL APPLICATION OF "PACT" TECHNOLOGY FOR SECONDARY/TERTIARY TREATMENT OF WASTEWATER. DATA WILL BE OBTAINED FROM A $45,000,000 WASTEWATER TREATMENT PLANT AT THE DUPONT CHAMBERS WORKS IN DEEPWATER, NJ. THE PLANT TREATS 26,000 GPM OF HIGHLY COLORED INDUSTRIAL WASTEWATER CONTAINING APPROXIMATELY 180 PPM DISSOLVED ORGANIC CARBON (DOC). MUCH OF THE ORGANIC CARBON IS RESISTANT TO BIOLOGICAL DEGRADATION BY ORDINARY ACTIVATED SLUDGE PROCESSES, AS WITNESSED BY A BOD5 DOC RATIO OF ONLY 1.0. IN THIS "PACT" TREATMENT, NEUTRALIZED EFFLUENT FROM THE PRIMARY TREATMENT SECTION OF THE PLANT IS CONTACTED WITH 80 TO 200 PPM POWDERED ACTIVATED CARBON AND FED TO THREE, PARALLEL, 4,000,000 GALLON AERATORS CONTAINING RECYCLED ACTIVATED SLUDGE. THE "PACT" COMBINED CARBON AND BIOLOGICAL TREATMNT REMOVES 95% OF FEED BOD5 AND OVER 80% OF THE DOC. COLOR AND TOXIC SUBSTANCES IN THE WASTEWATER ARE REDUCED. THE QUALITY OF THE PLANT EFFLUENT PERMITS THE TOTAL DISCHARGE FROM THE CHAMBERS WORKS TO MEET BOD5, DOC, AND COLOR LIMITATIONS IN THE CHAMBERS WORKS NPDES PERMIT. THE TREATMENT PLANT ALSO INCLUDES A MULTIPLE HEARTH FURNACE FOR REGENERATION OF POWDERED ACTIVATED CARBON FROM "PACT" SLUDGE. THIS IS THE FIRST LARGE SCALE USE OF THIS CARBON REGENERATION TECHNOLOGY. THE AERATOR/CLARIFIER SYSTEM HAS BEEN TREATING 28,000 GPM FLOW SINCE JUNE, 1977. FULL OPERATION OF THE REGENERATION FURNACE HAS BEEN DELAYED BY DESIGN PROBLEMS WITH BOTH THE SLUDGE CONVEYING SYSTEM, WHICH FEEDS THE FURNACE, AND THE FURNACE ITSELF. THE FURNACE WAS RESTARTED IN SEPTEMBER 1977. HOWEVER, BECAUSE OF FEED SYSTEM PROBLEMS ROUTINE OPERATION DIDN'T START UNTIL FEBRUARY, 1978. THE REGENERATION FURNACE IS CURRENTLY OPERATING AT 70% CAPACITY. THE QUALITY OF THE GENERATED CARBON IS ABOUT 70% OF VIRGIN CARBON. MODIFICATION OF THE REGENERATION SYSTEM IS CONTINUING.

**PROJECT: 00576-HIGH LEVEL OZONE DISINFECTION STUDY

STARTING/ COMPLETION DATE : 11/76 - 06/79 : FUNDING : ESTIMATED - FY78 / $ 62500
TASK CODE=C6118-0036 **EPA=R804946 ** (GRANT) PRIOR FY77 / $ 103000
EPA OFFICER,: EJ OPATKEN EPA/MERL - CINC
INVESTIGATOR,: PA SHARON MARLBOROUGH CITY GOVT
FC SAMPSON METCALF & EDDY ENGIN
E STOVER METCALF & EDDY ENGIN
MILESTONES...: 08/78 -EXPERIMENTAL WORK STARTED
08/79 -EXPERIMENTAL WORK COMPLETED
04/80 -FINAL REPORT
PLAN ID.....: (AP=6118)(DU=8106) WASTEWATER TREATMENT TECHNOLOGY PROGRAMS
MANDATE.....: 30-99 WATER TECHNOLOGY 0013
ORDIS CODES..: RECN=000576 SSIE-GMA 5116 EPA =R804946 TASK=C6118-0036
ORD =RC10830-3078 MAND=30-99 AP =6118
DU =8106 LABT=ALW

PROJ STATUS..: PROJECT=ACTIVE DATA=ORIGINAL CATEGORY=RESEARCH
ABSTRACT.....: A CURRENT TREND IN COASTAL STATES IS TO IMPOSE STRINGENT DISINFECTION STANDARDS ON TREATED WASTEWATER FOR THE PROTECTION OF SHELLFISH AREAS. SEVERAL STATES HAVE ALSO IMPOSED VERY STRINGENT DISINFECTION REQUIREMENTS TO PROTECT INLAND WATERS THAT ARE UTILIZED FOR WATER RECREATION. OZONE HAS SURFACED AS THE MOST PROMISING ALTERNATIVE DISINFECTANT TO CHLORINATION; HOWEVER, RESEARCH TO DATE HAS FOCUSED ON ACHIEVING DISINFECTION STANDARDS WELL ABOVE THOSE PROPOSED/IMPOSED FOR SPECIFIC RECEIVING STREAMS. THIS PROJECT WILL BE CAPABLE OF OZONATING A SIDE STREAM FROM A CONVENTIONAL ACTIVATED SLUDGE TREATMENT FACILITY TO DETERMINE OZONE REQUIREMENTS FOR ACHIEVING HIGH LEVELS OF DISINFECTION. FACILITIES ARE ALSO AVAILABLE FOR EVALUATING OZONE REQUIREMENTS ON A TERTIARY TREATED EFFLUENT. THE RESEARCH PLAN WILL EVALUATE THE EFFECT OF DIURNAL VARIATION OF RAW WATER ON PERFORMANCE AND DISINFECTION RELIABILITY. GOALS ON DISINFECTION ARE TOTAL COLIFORMS BELOW 230, 70 AND 3 P

**PROJECT: 03528-DELINEATION OF COASTAL MARSH BOUNDARIES IN CENTRAL ATLANTIC COASTAL REGION
STARTING/ COMPLETION DATE : 10/76 - 01/78 : FUNDING : ESTIMATED - FY78 / $ 2000
TASK CODE=M608C-011 **EPA=R804947-01 ** (GRANT) PRIOR FY77 / $ 37800
EPA OFFICER,: HV KIBBY EPA/ERL - CORVALLIS
INVESTIGATOR,: JD BOON VA INST OF MARINE SCI PHYS SCI & OCEAN ENG
MILESTONES...: 01/78 -FINAL REPORT
PLAN ID.....: (AP=608C)(DU=B115) MARINE & ESTUARINE ECOLOGICAL PROCESSESS & EFFECTS (IBA 608)
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN=003528 SSIE-GMA 3232 1 EPA =R804947-01 TASK=M608C-011
ORD =RM10830-1078 MAND=10-01 AP =608C
DU =B115 LABT=HEE

PROJ STATUS..: PROJECT=ACTIVE DATA=ORIGINAL CATEGORY=RESEARCH
ABSTRACT.....: OBJECTIVE: THIS PROJECT WILL BE TO DEVELOP A SET OF VEGETATIVE CRITERIA AND TO RELATE THESE CRITERIA TO A TIDAL DATUM IN THE MID-ATLANTIC REGION.

**PROJECT: 00180-EVALUATION OF THE APPLICABILITY OF ELECTROSTATIC PRECIPITATORS FOR NONFERROUS METALS EMISSION CONTROL
STARTING/ COMPLETION DATE : 08/78 - 11/79 : FUNDING : ESTIMATED - FY78 / $ 115000
TASK CODE=8604C-433 **EPA=R804955-02 ** (GRANT) PRIOR FY77 / $ 261000

EPA OFFICER.: JD BURCKLE EPA/IERL - CINC
INVESTIGATOR.: S OGLESBY SOUTHERN RESEARCH INST
GH NICHOLS SOUTHERN RESEARCH INST
RL MEEK SOUTHERN RESEARCH INST
JP GOOCH SOUTHERN RESEARCH INST
JR MCDONALD SOUTHERN RESEARCH INST
MB SMITH SOUTHERN RESEARCH INST
CE FEAZEL SOUTHERN RESEARCH INST
WJ BARNETT SOUTHERN RESEARCH INST
EB DISMUKES SOUTHERN RESEARCH INST
MILESTONES...: 11/79 -RECEIVE FINAL REPORT ON ESP
PLAN ID.....: (AP=604C)(DU=A128) MATERIALS PRODUCTION, INDUSTRIAL PT. SOURCES (AIR)
MANDATE.....: 10=02 CLEAN AIR ACT
ORDIS CODES..: RECN=000180 SSIE=ZZ 432 EPA =R804955-02 TASK=8604C-433
ORD =RB10C30-1078 MAND=10-02 AP =604C
DU =A128 LABT=EMI

PROJ STATUS..: PROJECT=ACTIVE DATA=ORIGINAL CATEGORY=RESEARCH
COMMENT.....: PREVIOUSLY FUNDED BY OEMI=HQ, TASK NO V604=01 0005
ABSTRACT.....: THIS IS A STUDY OF THE PERFORMANCE OF ELECTROSTATIC PRECIPITATORS FOR THE CONTROL OF PARTICULATE EMISSIONS FROM NONFERROUS METALLURGICAL SMELTERS, ROASTERS, AND FURNACES IN ZINC, LEAD, COPPER, AND ALUMINUM PLANTS. THE STUDY INCLUDES THE CHARACTERIZATION OF AIRBONE EMISSIONS FROM THESE OPERATIONS AND THE PREPARATION OF A MANUAL THAT CAN BE USED AS A GUIDE FOR THE SELECTION AND IMPROVEMENT OF CONTROL EQUIPMENT. DETAILED DATA ARE TO BE OBTAINED FROM OPERATING INSTALLATIONS ON MASS LOADINGS, PARTICLE SIZE DISTRIBUTION, AND TRACE METAL AND GAS CONCENTRATIONS. THESE DATA ARE TO BE COMBINED WITH LABORATORY MEASUREMENTS OF ELECTRICAL RESISTIVITY OF COLLECTED PARTICULATE MATTER AND WITH OPERATING DATA ON THE ELECTROSTATIC PRECIPITATOR CONTROL EQUIPMENT. THE INFORMATION WILL BE USED IN THE ANALYSIS OF PRECIPITATOR PERFORMANCE BY MEANS OF A COMPUTER MODEL. THE PROJECT ALSO INCLUDES THE DEVELOPMENT OF IMPROVED METHODS FOR SAMPLING AND ANALYSIS OF EFFLUENT GASES FROM METALLURGICAL OPERATIONS, ESPECIALLY METHODS OF ELIMINATING INTERFERENCES FROM CHEMICAL REACTIONS DURING SAMPLING.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REPORT: ORDCONV (VERSION V2.0) * OFFICE OF RESEARCH AND DEVELOPMENT *
LIST OF PROJECTS FROM MATCHED GRANT SYSTEM INPUT
RUN DATE: 06/29/79 * O R D I S D A T A E X T R A C T * PAGE- 110

**PROJECT: 02327-ROLE OF CO IN ARTEROGENESIS

STARTING/ COMPLETION DATE : 10/76 - 10/79 : FUNDING : ESTIMATED - FY78 / $ 102830
TASK CODE=H601C-7224 **EPA=R804959 ** (GRANT) PRIOR FY77 / $ 455857

EPA OFFICER.: MT WAGNER EPA/HERL - RTP
INVESTIGATOR.: KM BRINKHOUS UNIV OF NORTH CAROLINA SCH OF MED/PATH DEPT
TR GRIGGS UNIV OF NORTH CAROLINA SCH OF MED/PATH DEPT
MILESTONES...: 12/77 -DEVELOPMENT OF PROCEDURES
06/78 -PREPARATION OF ANIMALS, EXPOSURE BEGINS
12/78 -SACRIFICE AND ASSESSMENT OF ATHEROSCLEROSIS
03/79 -FINAL REPORT
PLAN ID.....: (AP-601C)(DU-A105) REFINEMENT OF HEALTH INFORMATION ON AIR POLLUTANTS
MANDATE.....: 10-02 CLEAN AIR ACT
ORDIS CODES..: RECN-002327 SSIE-ZZ 695 EPA -R804959 TASK-H601C-7224
ORD -RH10C30-1078 LABN-H601C-8224 MAND-10-02
AP -601C DU -A105 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THIS WORK IS DESIGNED TO STUDY THE EFFECTS OF CO ON DEVELOPMENT OF AND PHYSIOLOGICAL RESPONSE TO ATHEROSCLEROSIS. TWO SWINE MODELS ARE USED IN THIS WORK. IN THE FIRST, CORONARY ATHEROSCLEROSIS WILL BE INDUCED BY BALLOON DENUDATION OF THE CORONARY EPITHELIUM, AND A HIGH CHOLESTEROL DIET WILL BE FED. CO WILL BE ADMINISTERED TO THOSE SWINE. IN THE SECOND, EXPOSURE TO CO ALONE WILL BE USED. NORMAL SWINE AND SWINE WITH VON WILLEBRAND'S DISEASE WILL BE USED. CO HB LEVELS AND PLATELET FUNCTION WILL BE STUDIED, AND ATHEROSCLEROSIS DEVELOPMENT WILL BE ASSESSED. A NEW PROCEDURE FOR STUDY OF THE EFFECT OF PLATELET-ASSOCIATED VON WILLEBRAND FACTOR IN EARLY ATHEROSCLEROTIC LESIONS WILL BE APPLIED.

**PROJECT: 03562-TRANSITION ZONE VEGETATION BETWEEN INTERTIDAL MARSH AND UPLAND IN OREGON AND WASHINGTON

STARTING/ COMPLETION DATE : 10/76 - 08/78 : FUNDING : ESTIMATED - FY78 / $ 1200
TASK CODE=M608C-208 **EPA=R804963-01 ** (GRANT) PRIOR FY77 / $ 46000

EPA OFFICER,: AV KIBBY EPA/ERL - CORVALLIS
INVESTIGATOR,: RE FRENKEL OREGON STATE UNIV SCH OF SCI/ATMOS SCI DEPT
MILESTONES,..: 08/78 -FINAL REPORT
PLAN ID.....: (AP=608C)(DU=8115) MARINE & ESTUARINE ECOLOGICAL PROCESSESS & EFFECTS (IBA 608)
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
CURR. RESULTS: PILOT RESEARCH UNDERWAY. 0042
ORDIS CODES,.: RECN-003562 SSIE-GMA 3290 1 EPA -R804963-01 TASK-M608C-208
ORD -RM10830-1078 MAND-10-01 AP -608L
DU -8115 LABT-HEE

PROJ STATUS,.: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVES: TO DETERMINE THE PATTERN OF VEGETATION IN THE TRANSITION ZONE BETWEEN INTERTIDAL MARSH AND UPLAND VEGETATION IN OREGON AND WASHINGTON WITH THE ULTIMATE GOAL OF PROVIDING SUBSTANTIVE DATA UPON WHICH GUIDELINES FOR THE SPECIFICATION OF COASTAL WETLANDS MAY BE BASED. APPROACH: APPROXIMATELY 15 MARSHES IN COASTAL ESTUARIES AND THE PUGET SOUND WILL BE SELECTED BASED ON A CLASSIFICATION AND CRITERIA DEVELOPED IN THE PROJECT. SELECTED MARSHES WILL BE SAMPLED FLORISTICALLY USING LINE TRANSECTS IN ORDER TO DETERMINE MARSH ZONATION PATTERNS. THE TRANSITION ZONE WILL BE CHARACTERIZED BY FLORISTIC ANALYSIS INCLUDING, BUT NOT LIMITED TO, ORDINATION AND BRAUN-BLANQUET TABULAR ANALYSIS. VEGETATION CRITERIA FOR DEFINING THE UPPER AND LOWER BOUNDARIES OF THE TRANSITION ZONE WILL BE DEVELOPED AND WILL BE VALIDATED BY APPLICATION TO OTHER INTERTIDAL MARSHES IN OREGON AND WASHINGTON. SELECTED ENVIRONMENTAL MEASURES WILL BE TAKEN INCLUDING SALINITY AND SUBSTRATE TEXTURE. COORDINATION WITH THE NATIONAL OCEAN SURVEY, PROVIDING LEVELING TO DATUMS, AND WITH THE ENVIRONMENTAL PROTECTION AGENCY REMOTE SENSING PROGRAM WILL EXTEND THE VALUE OF THIS RESEARCH. CURRENT PLANS/PROGRESS: PILOT RESEARCH IN DEFINING UPPER LIMIT OF MARSH IN FOUR OREGON INTERTIDAL MARSHES IS UNDERWAY. PROPOSED RESEARCH WILL TAKE 18 MONTHS AND INVOLVE THE PRINCIPAL INVESTIGATOR AND THREE ASSISTANTS.

**PROJECT: 03031-COMPREHENSIVE PACKAGE FOR SIMULATION OF WATERSHED HYDROLOGY AND WATER QUALITY

STARTING/ COMPLETION DATE : 10/76 - 10/78 : FUNDING : ESTIMATED - FY78 / $ 102300
TASK CODE=K609A-402 **EPA=R804971-01 ** (GRANT) PRIOR FY77 / $ 271000

EPA OFFICER,: TO BARNWELL EPA/ERL - ATHENS
INVESTIGATOR,: DD FRANZ HYDROCOMP INC
JJ HELER HYDROCOMP INC
RC JOHANSON HYDROCOMP INC
KM LEYTHAM HYDROCOMP INC
AS DONIGIAN HYDROCOMP INC
DC BEYERLEIN HYDROCOMP INC
MILESTONES...: 12/77 -INTERIM REPORT
10/78 -FINAL REPORT ON SIMULATION MODEL
PLAN ID.....: (AP=609A)(DU=B106) SOURCES, PROCESSES & SYSTEMS
FINAL OUTPUT,: COMPUTER PROGRAM AND USER'S GUIDE TO BE PUBLISHED. 0024
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-003031 SSIE-GMA 4143 1 EPA -R804971-01 TASK-K609A-402
ORD -RK10830-1078 MAND-10-01 AP -609A
DU -B106 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVE OF THIS STUDY IS TO DEVELOP A COMPREHENSIVE BASIN WATERSHED HYDROLOGY AND WATER QUALITY MODEL. SUBMODELS OF WATERSHED, RESERVOIR, AND RIVER DYNAMICS WILL BE LINKED INTO A COMPREHENSIVE MODEL. THE MODEL WILL ROUTE WATER, WATER TEMPERATURE, DISSOLVED OXYGEN, BIOCHEMICAL OXYGEN DEMAND, NITROGEN, PHOSPHORUS, COLIFORM BACTERIA, CHLOROPHYL A, ZOOPLANKTON, BENTHIC ALGAE, DISSOLVED SOLIDS, AND CONSERVATIVE CONSTITUENTS. DIFFERENT LOADING MODULES WILL BE AVAILABLE FOR USER SELECTION. THE MODEL WILL BE STRUCTURED IN A MODULAR FORMAT TO FACILITATE THE FUTURE INTRODUCTION OF ALTERNATE SUBMODELS. A DOCUMENTED COMPUTER PROGRAM AND USER'S GUIDE DESCRIBING THE OPERATION OF THE COMPREHENSIVE MODEL WILL BE PUBLISHED.

**PROJECT: 00357-AUDIOVISUAL PROGRAM ON SURFACE MINING AND THE NATURAL ENVIRONMENT

STARTING/ COMPLETION DATE : 02/77 - 07/79 : FUNDING : ESTIMATED - FY78 / $ 228000
TASK CODE=B6238-504 **EPA=R804972-02 ** (GRANT) PRIOR FY77 / $ 88000

EPA OFFICER.: JF MARTIN EPA/IERL - CINC
INVESTIGATOR.: LE REYER INTERST MINING COMP COMM
KC BOWLING INTERST MINING COMP COMM
RE NICKEL HITTMAN ASSOCIATES INC
MILESTONES...: 10/77 -DRAFT INTERIM
11/77 -AWARD SECOND PHASE
07/79 -FINAL PROGRAM RECEIVED
PLAN ID.....: (AP-6238)(DU-N105) ENERGY RESOURCE EXTRACTION AND HANDLING, SOLID FOSSIL FUELS
MANDATE.....: 10-99 ACE MINING ACT OF 77 0008
ORDIS CODES..: RECN-000357 SSIE-GMA 3714 1 EPA -R804972-02 TASK-B6238-504
ORD -RB10830-1078 MAND-10-99 AP -623H
DU -N105 LABT-EMI

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
COMMENT.....: PROJECT WILL PRODUCE SLIDE-TAPE PROGRAM RE: MINING 0008
ENVIRONMENT, WITH STUDY WORKBOOK AND MANUAL FOR 0008
ENVIRONMENTAL PROTECTION TECHNOLOGY. 0008
ABSTRACT.....: THE PROJECT OBJECTIVE IS TO PREPARE A COMPREHENSIVE TRAINING PACKAGE, CONSISTING OF A NUMBER OF AUDIOVISUAL PRESENTATIONS AND AN ACCOMPANYING INSTRUCTIONAL MANUAL, WHICH CAN BE USED BY GOVERNMENT AND INDUSTRY TO: (1) UPGRADE AND IMPROVE THE TECHNIQUES AND PROCEDURES FOR ENFORCING STATE AND FEDERAL ENVIRONMENTAL REGULATIONS RELATED TO SURFACE MINING; (2) ACQUAINT REGULATORY AND PRODUCTION PERSONNEL WITH THE ENVIRONMENTAL SCIENCES, THE NATURE, EXTENT AND RELATIONSHIP OF SURFACE MINING ENVIRONMENTAL PROBLEMS, AND THE BASIC ENVIRONMENTAL CONTROL PRINCIPLES AND PRACTICES, AND (3) EXPLAIN AND ILLUSTRATE DIFFERENT USES AND APPLICATIONS OF BEST AVAILABLE AND COST-EFFECTIVE ENVIRONMENTAL CONTROL TECHNIQUES. A FORMAT WHICH IS GENERIC IN NATURE WILL BE UTILIZED IN DEVELOPING THE COURSE. THE USE OF SUCH A FORMAT IS DESIRABLE IN ORDER TO FACILITATE COURSE UTILIZATION THROUGHOUT THE VARIED AND EXTENSIVE GEOGRAPHIC AREA COVERED BY THE IMCC MEMBER STATES. IN PREPARING THOSE PORTIONS OF THE COURSE DEALING WITH THE CONTROL BASIS, EMPHASIS WILL BE GIVEN TO BASIC CONTROL PHILOSOPHY, PRINCIPLES, AND PRACTICES RATHER THAN A DETAILED COVERAGE OF SPECIFIC LAWS AND REGULATIONS WI

**PROJECT: 02632-EFFECTS OF POST-IMPLANTATION EXPOSURE TO PESTICIDES ON REPRODUCTIVITY OF RATS

STARTING/ COMPLETION DATE : 10/77 - 09/79 : FUNDING : ESTIMATED - FY78 / $ 12886
TASK CODE=H615A-8982 **EPA=R804974-01 ** (GRANT) PRIOR FY77 / $ 40000

EPA OFFICER.: A CURLEY EPA/HENL - RTP
INVESTIGATOR.: F SPENCER SOUTH UNIV AGRIC/MECH COLL BIOLOGY DEPT
MILESTONES...: 03/78 -PREPARATION OF LABORATORY AND ANIMAL QUARTERS
05/78 -VAGINAL CYTOLOGY AND INDUCTION OF PSEUDOPREGNANCY
07/79 -THE EFFECTS OF PESTICIDES ON POST IMPLANTATION
PLAN ID.....: (AP-615A)(DU-E105) MULTI-ROUTE EXPOSURES: HEALTH IMPLICATIONS OF PESTICIDES
MANDATE.....: 10-06 FEDERAL INSECTICIDE, FUNGICIDE AND RODENTICIDE AC
20-34 DAA FOR PESTICIDE PROGRAMS
30-99 ICIDES TOXICOLOGY
0012
ORDIS CODES..: RECN-002632 SSIE-ZZ 691 EPA -R804974-01 TASK-H615A-8982
ORD -RH10C30-5078 MAND-10-06 MAND-20-34
MAND-30-99 AP -615A DU -E105 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE PRESENT STUDY WOULD BE UNDERTAKEN TO EXAMINE THE POSSIBLE INCREASED INCIDENCE OF REPRODUCTIVE MALFUNCTION FOLLOWING THE POST-IMPLANTATION EXPOSURE OF FEMALE RATS TO PESTICIDES. FOUR AVENUES OF RESEARCH CONCERNING THE EFFECTS OF THESE PESTICIDES WILL BE EXPLORED. THESE ARE: 1. A BIOCHEMICAL APPROACH DESIGNED TO CHECK FOR ACCELERATED OR DECELERATED GROWTH OF THE PLACENTA DURING PREGNANCY AND OF THE UTERUS DURING DECIDUOMA-BEARING (DCR) PSEUDOPREGNANCY, HENCE, THE TOTAL PROTEIN CONTENT OF PLACENTAL TISSUE DURING PREGNANCY AND OF THE UTERINE TISSUE DURING DCR PSEUDOPREGNANCY, AND THE WATER CONTENT OF UTERI OF DCR PSEUDOPREGNANT RATS WILL BE ASSAYED. 2. AS AN INDEX OF POSSIBLE ABNORMAL TISSUE GROWTH, THE WET WEIGHT OF DCR PSEUDOPREGNANT UTERI AND OF PLACENTAL WET WEIGHT DURING PREGNANCY WILL BE DETERMINED. 3. MORPHOLOGICAL CHANGES IN PREGNANT RATS RELATED TO PESTICIDE TREATMENTS TO BE INVESTIGATED WILL BE: FETAL SURVIVAL RATES, FETAL RESORPTION AND ABORTION RATES, NUMBER OF FETUSES PER LITTER AT BIRTH (LIVE BORN VERSUS STILLBORN), TOTAL WEIGHT OF LIVE FETUSES PER LITTER AT BIRTH, NUMBER OF ORGANISMS PER LITTER AND POSSIBLE FETAL ABNORMALITIES AT BIRTH. 4. THE DIURNAL RHYTHM OF CORE BODY TEMPERATURE DURING DCR PSEUDOPREGNANCY WILL BE INVESTIGATED. THIS PARAMETER IS A BASIC PHYSIOLOGICAL FEATURE AND CONSTITUTES THE PLATFORM FOR OTHER BODY FUNCTIONS.

2802

**PROJECT: 02667-EFFECTS OF CHLORDIMEFORM ON VASCULAR TISSUE

STARTING/ COMPLETION DATE : 06/77 - 06/79 : FUNDING : ESTIMATED - FY78 / $ 33339
TASK CODE=H615F-8616 **EPA=R804975 ** (GRANT) PRIOR FY77 / $ 32047

EPA OFFICER,: JM CHARLES EPA/HERL - RTP
INVESTIGATOR,: CP ROBINSON UNIV OF OKLAHOMA SCH OF PHARMACY/PHARM DEPT
MILESTONES...: 05/78 -REPORT ON CHLORDIMEFORM
07/78 -REPORT ON DEMETHYL CHLORDIMEFORM
08/78 -REPORT ON BAAM
PLAN ID.....: (AP-615F)(DU-E105) MULTI-ROUTE EXPOSURES: HEALTH IMPLICATIONS OF PESTICIDES (SUBSTITUTE CHEMICALS)
MANDATE.....: 10-06 FEDERAL INSECTICIDE, FUNGICIDE AND RODENTICIDE AC
20-34 DAA FOR PESTICIDE PROGRAMS
30-99 COLOGY OF PES. & TOXIC SUBST. 0011
CURR. RESULTS: EXPERIMENTS DEMONSTRATED THAT CHLORDIMEFORM INCREAS 0011
SYSTOLIC AND DIASTOLIC PRESSURE. 0011
ORDIS CODES..: RECN-002667 SSIE-GMA 4835 1 EPA -R804975 TASK-H615F-8616
ORD -RH10830-5078 MAND-10-06 MAND-20-34
MAND-30-99 AP -615F DU -E105 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: DETERMINE THE EFFECTS OF CHLORDIMEFORM AND RELATED PESTICIDES ON VASCULAR SMOOTH MUSCLE AND OTHER NEUROPHYSIOLOGICAL FUNCTIONS. STUDY THE EFFECTS OF THE PESTICIDE AS AN ANTAGONIST OF VASCULAR SMOOTH MUSCLE CONTRACTION; THE MOVEMENT OF CA IONS IN VASCULAR SMOOTH MUSCLE; AND THE UPTAKE AND RELEASE OF NOREPINEPHRINE FROM SYMPATHETIC NERVES. CHLORDIMEFORM ANTAGONIZES CONTRACTIONS OF VASCULAR SMOOTH INDUCED BY SEVERAL VASOACTIVE AGENTS. THE RATE OF CA IONS EFFLUX FROM PRE-LOADED AORTIC STRIPS IS ENHANCED BY CHLORDIMEFORM BUT THE UPTAKE INTO THESE STRIPS IS UNAFFECTED. WHOLE DOG EXPERIMENTS HAVE DEMONSTRATED THAT CHLORDIMEFORM INCREASES SYSTOLIC AND DIASTOLIC PRESSURE.

**PROJECT: 01441-POLLUTANTS FROM SYNTHETIC FUELS PRODUCTION

STARTING/ COMPLETION DATE : 11/76 - 10/81 : FUNDING : ESTIMATED - FY78 / $ 600000
TASK CODE=F623A-24 **EPA=R804979 ** (GRANT) PRIOR FY77 / $ 468000

EPA OFFICER.: TW PETRIE EPA/IERL - RTP
INVESTIGATOR.: FO MIXON RESEARCH TRIANGLE INST
JG CLELAND RESEARCH TRIANGLE INST
DG NICHOLS RESEARCH TRIANGLE INST
D WAGONER RESEARCH TRIANGLE INST
C SPARACINO RESEARCH TRIANGLE INST
MILESTONES...: 12/77 -TEST PLAN FORMULATED
08/78 -REPORT ISSUED ON PRELIMINARY TESTS
12/78 -SCREENING FOR KINETICS OF POLLUTANT FORMATION DONE
08/79 -REPORT ISSUED ON KINETICS OF POLLUTANT FORMATION
11/80 -ENVIRONMENTAL ASSESSMENT OF POLLUTANTS COMPLETED
11/81 -RECOMMENDATION MADE FOR CONTROL OF POLLUTANT FORMATION
PLAN ID.....: (AP-623A)(DU-N105) FUEL PROCESSING
ORDIS CODES..: RECN-001441 SSIE-ZZ 185 EPA -R804979 TASK-F623A-24
AP -623A DU -N105 LABT-EMI
PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY- UNKN
ABSTRACT.....: THE PURPOSE OF THIS RESEARCH IS TO DEVELOP A FUNDAMENTAL UNDERSTANDING OF THOSE FACTORS AND CONDITIONS WHICH WILL CAUSE THE PRODUCTION OF ENVIRONMENTAL POLLUTANTS IN SYNFUELS PROCESSES. THE RESEARCH PLAN INCLUDES BOTH AN EXPERIMENTAL AND AN ANALYTICAL STUDY. THE EXPERIMENTAL STUDY INCLUDES: THE DESIGN, FABRICATION AND OPERATION OF LABORATORY REACTORS TO SIMULATE CONDITIONS IN ACTUAL SYNFUELS PLANTS; THE DEVELOPMENT AND IMPLEMENTATION OF CHEMICAL ANALYSIS PROCEDURES FOR THE EVALUATION OF ELEMENTS AND COMPOUNDS THAT RESULT FROM SCREENING OF THE MAJOR COALS WHICH ARE AVAILABLE IN THE U.S.; AND THE DETERMINATION OF THE KINETICS OF FORMATION OF THE POLLUTANTS OF SIGNIFICANCE. THE ANALYTICAL STUDY PROVIDES FOR UTILIZING RESULTS OF THE SCREENING TESTS TO: PROJECT POTENTIAL HUMAN EXPOSURE TO EFFLUENTS AND EMISSIONS FROM THESE PLANTS; AND ESTABLISH PRIORITY RATINGS FOR THE VARIOUS POLLUTANTS BASED UPON THE EXTENT TO WHICH PROJECTED EXPOSURES ARE HAZARDOUS. THIS RESEARCH WILL PROVIDE TO EPA AND TO THE SCIENTIFIC AND TECHNICAL COMMUNITY THE INFORMATION NEEDED TO GUIDE THE CONTROL OF POTENTIALLY HAZARDOUS MATERIALS FROM SYNFUELS PLANTS OF THE FUTURE. THE DATA WHICH ARE GENERATED IN THIS STUDY WILL BE INTERPRETED RELATIVE TO MULTIMEDIA ENVIRONMENTAL GOALS FOR SYNFUELS PROCESSES. PRELIMINARY BATCH GASIFICATION RUNS WITH CHAR, BITUMINOUS COAL AND SUBBITUMINOUS COAL HAVE SHOWN CONSISTENT MAJOR POLLUTANT CLASSES. THEY ARE THIOLS AND SULFIDES, BENZENES AND SUBSTITUENTS, PHENOLS, FUSED POLYCYCLICS, SULFUR HETEROCYCLICS AND INORGANIC SULFUR COMPOUNDS. THE CONCENTRATION OF SELECTED ONES OF THESE POLLUTANTS CAN BE FOLLOWED IN TIME DURING A RUN TO RELATE POLLUTANT FORMATION TO OPERATING CONDITIONS.

**PROJECT: 01941-MOBILE SAMPLING AND ANALYSIS OF TRACERS FOR STATE

STARTING/ COMPLETION DATE : 10/76 - 10/78 : FUNDING : ESTIMATED - FY78 / $ 45511
TASK CODE=G6258-EA-18 **EPA=R804990-02 ** (GRANT) PRIOR FY77 / $ 67957

EPA OFFICER.: F SCHIENMEIER EPA/ESRL - RTP
INVESTIGATOR.: FH SHAIR CALIFORNIA INST OF TECH SCH OF ENG/CHEM & CHEM ENG
MILESTONES...: 08/78 -CONDUCT FIELD STUDY
10/78 -REPORT DETAILING ALL MEASUREMENT PARAMETERS DISSEMINATED
PLAN ID.....: (AP-625H)(DU-N140) TRANSPORT AND FATE OF ENERGY-RELATED POLL. IN ECOSYSTEMS
MANDATE.....: 10-02 CLEAN AIR ACT
CURR. RESULTS: DOCUMENT THE TEMPORAL VARIATIONS OF PLUME CONCENTRA 0037
0037
AT GROUND LEVEL.
ORDIS CODES..: RECN-001941 SSIE-GMA 3430 1 EPA -R804990-02 TASK-G6258-EA-18
ORD -RG10830-1078 LABN-G603A-AA-27 MAND-10-02
AP -625H DU -N140 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THIS TASK HAS BEEN INCORPORATED IN A LARGE PROGRAM TO DETERMINE TRANSPORT, TRANSFORMATION, AND REMOVAL PROCESSES AND RATES AFFECTING ATMOSPHERIC CONCENTRATIONS OF SULFUR COMPOUNDS. INITIAL EMPHASIS IS ON STUDIES OF DEFINABLE PLUMES OUT TO TIMES AND DISTANCES OF 24 HRS. AND 500 KM, RESPECTIVELY. INTENSIVE MOBILE GROUND-LEVEL MEASUREMENTS OF A GASEOUS TRACER RELEASED IN A POWER PLANT STACK WILL BE MADE, PARTICULARLY IN THE AREAS WHERE MAXIMUM GROUND-LEVEL STACK GAS CONCENTRATIONS, HENCE MAXIMUM DRY REMOVAL OF SULFUR SPECIES IS EXPECTED TO OCCUR. RESULTS OF THIS TASK WILL QUANTIFY TRACER CONCENTRATIONS AT GROUND LEVEL, AND FILL IN GAPS IN DISCONTINUOUS AIRBORNE TRACER MEASUREMENTS, TO PERMIT A MORE COMPLETE DELINEATION OF THE THREE-DIMENSIONAL STRUCTURE OF PLUMES UNDER VARYING METEOROLOGICAL CONDITIONS. PREVIOUS WORK OF THIS SAME KIND WAS PERFORMED IN THE ST. LOUIS, MO AREA AS PART OF THE REGIONAL AIR POLLUTION STUDY, AND HAS SERVED TO DOCUMENT THE TEMPORAL VARIATIONS OF PLUME CONCENTRATIONS AT GROUND LEVEL. FIELD WORK UNDER THE CURRENT PROGRAM WILL BE PERFORMED IN AUGUST, 1978.

**PROJECT: 03712-GENERALIZATION OF WATER QUALITY CRITERIA USING CHEMICAL MODELS

STARTING/ COMPLETION DATE : 10/76 - 10/79 : FUNDING : ESTIMATED - FY78 / $ 100000
TASK CODE=N608A-087 **EPA=R804996-02 ** (GRANT) PRIOR FY77 / $ 107600

EPA OFFICER,: GE GLASS EPA/ERL - DULUTH
INVESTIGATOR,: DK MARRISS UNIV OF MINNESOTA
VR MAGNUSUN UNIV OF MINNESOTA
MILESTONES,..: 10/78 -COMPLETE DRAFT OF REVISED CHEMICAL SPECIATION MODEL
10/79 -COMPLETE FINAL REVISED CHEMICAL SPECIATION MODEL
10/79 -APPLY MODEL TO REPRESENTATIVE WATER QUALITY CRITERIA
PLAN ID.....: (AP-608A)(DU-R115) FRESHWATER ECOLOGICAL PROCESSESS & EFFECTS
MANDATE.....: 30-99 ISTRY - MATHEMATICS 0046
CURR. RESULTS: SUBSTANTIAL PROGRESS MADE ON COMPUTER MODELING, DA 0045
AND COLLECTION AND INTERPRETATION OF TOXICITY DATA, 0045
ORDIS CODES,.: RECN-003712 SSIE-ZZ 250 EPA -R804996-02 TASK-N608A-087
ORD -RN10C30-3078 LABN-N769 -DU1 MAND-30-99
AP -608A DU -R115 LABT-MEE

PROJ STATUS,.: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE FINAL GOAL FOR THIS PROJECT IS THE CORRELATION OF TOXICITY IN A PARTICULAR ECOSYSTEM WITH CHEMICAL SPECIATION AND USE OF THESE CORRELATIONS TO DETERMINE REALISTIC WATER STANDARDS. BIOLOGICAL ACTIVITY MOST COMMONLY CORRELATES BEST WITH SPECIFIC FORMS OR SPECIES OF CONTAMINANTS AND WATER QUALITY STANDARDS WOULD BE MOST SOUNDLY STRUCTURED ON THE PROBABILITY OF AN OFFENDING SPECIES BEING PRESENT OR AVAILABLE. THREE AREAS OF ACTIVITY ARE INVOLVED IN MEETING PROJECT GOALS: A. PREDICTIVE COMPUTER MODELING UTILIZING SPECIATION AND TOXICITY DATA; B. ASSEMBLING A DATA BASE ON SPECIATION FROM LITERATURE, EXPERIMENT, AND ESTIMATION. C. COLLECTION AND INTERPRETATION OF TOXICITY DATA FROM LITERATURE AND EXPERIMENTATION. TO DATE, SUBSTANTIAL PROGRESS HAS BEEN MADE ON PARTS A AND B.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
* OFFICE OF RESEARCH AND DEVELOPMENT *
LIST OF PROJECTS FROM MATCHED GRANT SYSTEM INPUT
* O R D I S D A T A E X T R A C T *

**PROJECT: 02618-CHLORINATED HYDROCARBON INSECTICIDES VS. CARCINOGENIC ACTION

STARTING/ COMPLETION DATE : 07/77 - 07/80 : FUNDING : ESTIMATED - FY78 / $ 50000
TASK CODE=H615A-8542 **EPA=R805008 ** (GRANT) PRIOR FY77 / $ 49000

EPA OFFICER,: S NESNOW EPA/HERL - RTP
INVESTIGATOR,: R HART OHIO STATE UNIV COLL OF MED
N LEWIS OHIO STATE UNIV COLL OF MED

MILESTONES...: 12/77 -CHEMICAL SYNTHESIS OF 15 AGENTS
01/78 -PRELIMINARY INSECT EVALUATION
03/78 -PRELIMINARY BONDING EXPERIMENT
12/78 -MUTATION ANALYSIS

PLAN ID.....: (AP-615A)(DU-E105) MULTI-ROUTE EXPOSURES: HEALTH IMPLICATIONS OF PESTICIDES

MANDATE.....: 10-06 FEDERAL INSECTICIDE, FUNGICIDE AND RODENTICIDE AC
20-34 DAA FOR PESTICIDE PROGRAMS
0009
30-99 INUGENESIS

CURR. RESULTS: DIELDRIN ANALOGS (15) HAVE BEEN COMPLETED, INITIAL 0009
ON PARENT INSECTICIDES COMPLETED IN INSECT TEST SYS 0009

ORDIS CODES..: RECN-002618 SSIE-GMA 5343 EPA -R805008 TASK-H615A-8542
ORD -RH10830-5078 MAND-10-06 MAND-20-34
MAND-30-99 AP -615A DU -E105 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH

ABSTRACT.....: THE LONG-TERM OBJECTIVE OF THIS PROJECT IS THE DETERMINATION OF THOSE STRUCTURAL CHARACTERISTICS RESPONSIBLE FOR THE DELETERIOUS VS. BENEFICIAL ACTION OF CHLORINATED PESTICIDES. THESE STUDIES WILL PERMIT THE DEVELOPMENT OF A MODEL SYSTEM FOR THE RATIONAL DESIGN, SYNTHESIS, AND DEVELOPMENT OF NONCARCINOGENIC, YET BIOLOGICALLY EFFECTIVE PESTICIDES. THE SPECIFIC CHEMICAL OBJECTIVES INCLUDE: A) THE SYNTHESIS OF RATIONALLY DESIGNED COMPOUNDS WITH SYSTEMATICALLY JUXTAPOSED FUNCTIONAL GROUPS. B) COMPOUNDS DEMONSTRATING DIFFERENTIAL BIOLOGICAL EFFECTS WILL BE SYNTHESIZED WITH RADIOLABELS TO DETERMINE THE EXTENT AND TYPE OF MACROMOLECULAR INTERACTION OF THESE WITH CELLULAR COMPONENTS. THE HALOGENATED PESTICIDES (ALDRIN AND DIELDRIN) AND THE ANALOGS SYNTHESIZED FOR THESE STUDIES WILL BE EVALUATED AT THE MOLECULAR LEVEL FOR THEIR ABILITY TO: A) BIND TO DNA; B) FORM SPECIFIC DN-P BOND(S); C) PRODUCE GENETIC DAMAGE; AND D) PRODUCE REPAIRABLE VS. NONREPAIRABLE GENETIC DAMAGE. THE CELLULAR EVALUATIONS WILL INCLUDE STUDIES ON: A) THE CYTOTOXIC, B) THE MUTAGENIC, C) THE CARCINOGENIC AND D) VIRAL SYNERGISTIC POTENTIAL OF THESE AGENTS IN OUR MAMMALIAN TEST SYSTEMS. IN ADDITION WE WILL EVALUATE AND ATTEMPT TO MODIFY THE RATE AND EXTENT OF ACTION FOR EACH OF THESE AGENTS AND CORRELATE THIS WITH THE LEVEL OF INDUCTION AND RATE OF REMOVAL OF SPECIFIC DN-P COMPLEX(ES). THE ECOLOGICAL CONSIDERATIONS WILL INCLUDE THE DETERMINATION OF PESTICIDAL EFFECTIVENESS AND BIOMAGNIFICATION POTENTIAL OF THESE HALOGENATED COMPOUNDS. DIELDRIN ANALOGS (15) HAVE BEEN SYNTHESIZED. TEN OTHER CHEMICAL AGENTS HAVE BEEN SYNTHESIZED OR OBTAINED TO ENHANCE THE DATA BASE. INITIAL STUDIES ON PARENT INSECTICIDES HAVE BEEN COMPLETED IN INSECT TEST SYSTEMS, INCLUDING ORAL AND TOPICAL TOXICITY USING HOUSE FLIES AND IMMERSION TESTS USING MOSQUITO LARVAE. PRESENT STUDIES UNDERWAY INCLUDE UNSCHEDULED DNA SYNTHESIS AND CYTOTOXICITY IN V-79 AND VA-4 MAMMALIAN CELL SYSTEMS. MUTATION ANALYSIS IN V-79 CELLS AND BINDING STUDIES IN V-79 AND VA-4 CELLS.

**PROJECT: 03131-NON-POINT SOURCE MODEL - WATERSHED INPUT FROM LAND AREAS RECEIVING ANIMAL WASTES
STARTING/ COMPLETION DATE : 10/76 - 07/79 : FUNDING : ESTIMATED - FY78 / $ 54600
TASK CODE=K6178-418 **EPA=R805011-01 ** (GRANT) PRIOR FY77 / $ 170000

EPA OFFICER,: RR SWANK EPA/ERL - ATHENS
INVESTIGATOR,: 4R OVERCASH UNIV OF NORTH CAROLINA BIOL/AGRIC ENG
PW WESTERMAN UNIV OF NORTH CAROLINA BIOL/AGRIC ENG
KR REDDY UNIV OF NORTH CAROLINA BIOL/AGRIC ENG
MILESTONES...: 10/77 -PROGRESS REPORT ON OBJECTIVES (1) & (2)
04/78 -TECHNICAL PAPER (CORNELL SYMPOSIUM) ON MODEL ALGORITHMS
11/78 -EXPERT WORKSHOP ON OVERALL MODELING COMPATIBILITY
PLAN ID.....: (AP-6178)(DU-) NONIRRIGATED CROP PRODUCTION
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-003131 SSIE-ZZ 346 EPA -R805011-01 TASK-K6178-418
ORD -RK10C30-1078 MAND-10-01 AP -6178
PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVE OF THIS GRANT IS TO DEVELOP A METHODOLOGY FOR THE EVALUATION OF THE CONTRIBUTION OF ANIMAL WASTES TO WATERSHED NONPOINT SOURCE POLLUTANT LOADS. SPECIFICALLY, THREE STEPS TO THE APPROACH ARE ENVISIONED: (1) ESTABLISH A THOROUGH, INTERPRETIVE REVIEW OF THE ANIMAL WASTE LITERATURE DATA RELATED DIRECTLY TO THE PLANT-SOIL SYSTEM; (2) SYNTHESIZE DESCRIPTIVE CONCEPTS AND MODELS WHICH PROVIDE PREDICTION OF THE CHANGES IN LAND-APPLIED ANIMALS WASTES WITH TIME AND THE TRANSFER OF THESE MATERIALS TO RAINFALL-RUNOFF LIQUID AND SEDIMENT; AND (3) TRANSLATE THE RESULTS FROM (1) AND (2) INTO MATHEMATICAL ALGORITHMS OF FUNTIONALITY SUFFICIENT FOR INCORPORATION INTO EXISTING OPERATIONAL POLLUTANT LOADING MODELS SUCH AS EPA'S AGRICULTURAL RUNOFF MANAGEMENT MODEL (ARM) AND GENERALIZED NONPOINT SOURCE MODEL (NRS) OR USDA'S AGRICULTURAL CHEMICAL TRANSPORT MODEL (ACTMO). A MODELING WORKSHOP OF "EXPERTS" WILL BE CONVENED TO INSURE ALGORITHM COMPLETENESS AND COMPATIBILITY WITH CURRENTLY UTILIZED RUNOFF ASSESSMENT PACKAGES. A FINAL REPORT WILL BE PUBLISHED AND WILL INCLUDE ANALYSIS OF AVAILABLE DATA, CONCEPTUALIZATION OF MATHEMATICAL MODELS (SUBMODELS) AND FORMULATION OF COMPUTER PROGRAMS.

**PROJECT: 00937-EFFECTS OF PARTICLE SIZE ON LANDFILLED SOLID WASTE - COLD CLIMATE STUDIES
STARTING/ COMPLETION DATE : 01/77 - 06/81 : FUNDING : ESTIMATED - FY78 / $ 29010
TASK CODE=C618A-7041 **EPA=R805012-01 ** (GRANT) PRIOR FY77 / $ 50000

EPA OFFICER,: RA CARNES EPA/MERL - CINC
INVESTIGATOR,: TO CARMODY STATE MENTAL HLTH INST
MILESTONES...: 06/81 -FINAL REPORT PUBLISHED
PLAN ID.....: (AP-618A)(DU-D110) SOLID & HAZARDOUS WASTE MANAGEMENT
FINAL OUTPUT,: EVAL. OF REGULATIONS CONTROLLING LAND DISPOSAL OF S 0020
WASTE WITHOUT DAILY COVER. 0020
MANDATE.....: 10-05 RESOURCE CONSERVATION AND RECOVERY ACT
ORDIS CODES..: RECN-000937 SSIE-GMA 3948 1 EPA -R805012-01 TASK-C618A-7041
ORD -RC10830-1078 MAND-10-05 AP -618A
DU -D110 LABT-ALW
PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE PRIMARY OBJECTIVE OF THIS PROJECT IS TO EVALUATE THE AESTHETIC FACTORS ASSOCIATED WITH LAND DISPOSAL OF MILLED SOLID WASTE IN A VARIETY OF PARTICLE SIZES WITHOUT DAILY COVER. PARTICLE SIZES TO BE INVESTIGATED ARE 2", 4", 6", AND 8". VARIABLES TO BE EVALUATED: EFFECT OF WIND VELOCITIES ON DEBRIS BLOWING; DIFFERENTIAL SETTLEMENT; INITIAL DENSITY AND EFFECTS OF TIME; PLANT GROWTH; VECTORS AND WILDLIFE; ODORS. THE RESULTS OF THIS STUDY SHOULD ALLOW AGENCIES CONCERNED TO BETTER EVALUATE REGULATIONS CONTROLLING LAND DISPOSAL OF SHREDDED WASTE WITHOUT DAILY COVER.

**PROJECT: 01073-STUDY OF PATHOGENIC FREE-LIVING AMOEBA IN FRESH WATER LAKES IN VIRGINIA

STARTING/ COMPLETION DATE : 11/76 - 10/79 : FUNDING : ESTIMATED - FY78 / $ 72000
TASK CODE=D607C-024 **EPA=R805014-03 ** (GRANT) PRIOR FY77 / $ 144700

EPA OFFICER.: M JAKUBOWSKI EPA/HERL - CINC
INVESTIGATOR.: RJ DUMA VIRGINIA COMMONWEALTH UNIV MED COLL OF VA
MILESTONES...: 11/77 -ANNUAL REPORT
11/78 -ANNUAL REPORT
11/79 -FINAL REPORT
PLAN ID.....: (AP=607C)(DU=B103) WATER QUALITY HEALTH EFFECTS: CRITERIA FOR RECREATIONAL & SHELLFISH-GROWING WATERS
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
30-99 OBIOLOGY
0003
ORDIS CODES..: RECN-001073 SSIE-ZZ 725 EPA -R805014-03 TASK-D607C-024
ORD -RD10C30-5078 MAND-10-01 MAND-30-99
AP -607C DU -B103 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THIRTEEN FRESH WATER LAKES WITHIN A RADIUS OF 27 MILES LOCATED IN AND SURROUNDING THE VICINITY OF RICHMOND, VIRGINIA, ARE BEING CONTINUOUSLY SAMPLED IN SEARCH OF PATHOGENIC FREE-LIVING AMOEBAE, PARTICULARLY OF THE GENUS NAEGLERIA. LARGE VOLUMES OF WATER FILTERED THROUGH SAND COLUMNS AND SOIL BOTTOMS FROM THE SAME AREAS ARE SUBJECTED TO TEMPERATURE SELECTIVE CULTURAL PROCEDURES (44 DEGREES C). SAMPLING IS PERFORMED REGULARLY AND BIWEEKLY. ISOLATES ARE PLACED IN CHIANG'S AXENIC MEDIA SELECTING TOWARDS PATHOGENICITY. IF LUXURIANT GROWTH OCCURS, THE ISOLATES ARE THEN INSTILLED INTRANASALLY INTO MICE FOR PATHOGENICITY STUDIES. IF POSITIVE, FURTHER STUDIES OF IMMUNOLOGY (IFA) AND MORPHOLOGY (PHASE AND EM) OF THE ORGANISMS ARE PERFORMED. THE LAKES ARE ALSO STUDIED IN TERMS OF PHYSIOCHEMICAL AND BIOLOGICAL CHARACTERISTICS ESPECIALLY AS REGARDS BACTERIAL FLORAE. IN ADDITION, REGULAR CLIMATOLOGICAL DATA IS COLLECTED FROM THE AREA THROUGHOUT THE YEAR.

**PROJECT: 03240-ENGINEERING PERFORMANCE OF THERMOPLASTIC WATER WELL CASINGS

STARTING/ COMPLETION DATE : 03/77 - 03/79 : FUNDING : ESTIMATED - FY78 / $ 45120
TASK CODE=L6098-11 **EPA=R805015 ** (GRANT) PRIOR FY77 / $ 72198

EPA OFFICER,: MR SCALF EPA/ERL - ADA
INVESTIGATOR,: JC WARMAN AUBURN UNIV WAT RES RES INST
CE KURT AUBURN UNIV WAT RES RES INST
HM ANDERSON SAMSON PLASTIC CONDUIT
MILESTONES...: 08/79 -FINAL REPORT
PLAN ID.....: (AP-609B)(DU-B106) PLAN 609B
MANDATE.....: 20-99 RN UNIV., AUBURN, AL 0032
CURR. RESULTS: LOADS & ENV. FOR TESTING PURPOSES DESIGNED & TESTIN 0032
FIXTURES DESIGNED, PROCURED & INSTALLED, SEV. PIPE 0032
CONNECTION CONCEPTS TESTED. 0032
ORDIS CODES..: RECN-003240 SSIE-ZZ 269 EPA -R805015 TASK-L6098-11
ORD -RL10C30-2078 LABN-L614C-013 MAND-20-99
AP -6098 DU -B106 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVE: TO PROVIDE THE ENGINEERING DATA NECESSARY FOR DEVELOPMENT OF A RATIONAL DESIGN CRITERIA FOR THERMOPLASTIC WATER WELL CASINGS. THIS DESIGN CRITERIA WILL CONSIDER STRUCTURAL, ENVIRONMENTAL, AND ASSEMBLY ASPECTS OF THE WATER WELL CONSTRUCTION. APPROACH: A) DEVELOP INFORMATION FROM WATER WELL DRILLERS CONCERNING EXPERIENCE WITH THERMOPLASTIC CASINGS; B) DEVELOP PRELIMINARY DESIGN CRITERIA, INCLUDING LOADS AND ENVIRONMENTAL EFFECTS; C) DEVELOP TEST PLAN AND CONDUCT NECESSARY TESTS TO OBTAIN DESIGN CONSTRAINTS; D) DEVELOP AND TEST CASING JOINT DESIGNS; E) PREPARE FINAL REPORT AND PRESENT TO APPROPRIATE NATIONAL ORGANIZATIONS. PROGRESS: LOADS AND ENVIRONMENTS FOR TESTING PURPOSES HAVE BEEN DESIGNED AND TESTING FIXTURES HAVE BEEN DESIGNED, PROCURED, AND INSTALLED FOR BOTH LONG-TERM AND SHORT-TERM TESTS. SEVERAL PIPE CONNECTION CONCEPTS HAVE BEEN TESTED TO DATE.

**PROJECT: 00182-TECHNICAL AWARENESS IN THE NONFERROUS METALS INDUSTRY--PILOT STUDY
(TANMIPS)
STARTING/ COMPLETION DATE : 02/77 - 02/81 : FUNDING : ESTIMATED - FY78 / $ 43000
TASK CODE=8604C-560 **EPA=R805095-01 ** (GRANT) PRIOR FY77 / $ 42000

EPA OFFICER.: AB CRAIG EPA/IERL - CINC
INVESTIGATOR.: ES BARTLETT BATTELLE MEMORIAL INST
RH CHENRY BATTELLE MEMORIAL INST
MILESTONES...: 02/81 -FINAL REPORT RECEIVED
PLAN ID.....: (AP-604C)(DU-A128) MATERIALS PRODUCTION, INDUSTRIAL PT. SOURCES (AIR)
FINAL OUTPUT.: SIX BIMONTHLY AWAREMESS BULLETINS TO BE GIVEN LIMIT 0005
DISTRIBUTION WITHIN IERL-CINN. 0005
MANDATE.....: 20-62 DAA FOR ENERGY ,MINERALS, AND INDUSTRY
ORDIS CODES..: RECN-000182 SSIE-ZZ 433 EPA -R805095-01 TASK-8604C-560
ORD -R810C30-2078 MAND-20-62 AP -604C
DU -A128 L48T-EMI

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVE IS TO PILOT A SIMPLE, INEXPENSIVE SYSTEM TO PROVIDE, MAINTAIN, AND COMMUNICATE TO IERL/CINCINNATI AN UP-TO-DATE AWARENESS AND ASSESSMENT OF TECHNOLOGICAL DEVELOPMENTS IN THE NONFERROUS METALS INDUSTRIES THAT ARE BELIEVED TO HAVE SIGNIFICANT ENVIRONMENTAL IMPACT. APPROACH - INFORMATION WILL BE GATHERED BY REVIEW OF THE PERIODICAL LITERATURE, SPECIAL REPORTS, LIMITED TRAVEL VISITS, AND INTERVIEWS. OUTPUT - THE PRODUCT OF THIS PROPOSED PROGRAM WILL BE SIX BIMONTHLY AWARENESS BULLETINS WHICH WILL BE GIVEN LIMITED DISTRIBUTION WITHIN IERL-CINCINNATI. THE OUTPUT WILL BE ARRANGED IN A PHYSICAL MANNER AND FORMAT SO AS TO PERMIT RAPID METHODICAL STORAGE AND RETRIEVAL OF THE IN

289

**PROJECT: 00693-ANALYSIS OF BIOLOGICAL TREATMENT PLANT PERFORMANCE

STARTING/ COMPLETION DATE : 04/77 - 09/79 : FUNDING : ESTIMATED - FY78 / $ 49715
TASK CODE=C6118-7121 **EPA=R805097-01 ** (GRANT) PRIOR FY77 / $ 74990

EPA OFFICER.: J BENDER EPA/MERL - CINC
INVESTIGATOR.: ED SCHROEDER UNIV OF CALIFORNIA SCH OF ENG
G TCHOBANOGLOU UNIV OF CALIFORNIA SCH OF ENG
MILESTONES...: 04/79 -STABILITY/RELIABILITY RELATIONSHIPS RESEARCH COMPLETE
09/79 -IMPACT OF TOXICS COMPLETE
PLAN ID.....: (AP-6118)(DU-B106) WASTEWATER TREATMENT TECHNOLOGY PROGRAMS
FINAL OUTPUT.: RELATIONSHIP BETWEEN PROCESS DESIGN AND OPERATION & 0015
COEFFICIENT OF VARIATION. 0015
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-000693 SSIE-ZZ 400 EPA -R805097-01 TASK-C6118-7121
ORD -RC10C30-1078 LABN-C6118-074 MAND-10-01
AP -6118 DU -B106 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJCTIVES OF THIS PROJECT ARE TO COLLECT FIELD PERFORMANCE DATA FROM APPROXIMATELY 100 ACTIVATED SLUDGE AND 100 TRICKLING FILTER PROCESSES AND TO DETERMINE THE STATISTICAL DISTRIBUTION OF EFFLUENT QUALITY VALUES AROUND THE ANNUAL MEAN PARAMETER VALUES, RELATIONSHIPS BETWEEN EFFLUENT QUALITY AND TEMPERATURE, FLOW RATE AND DESIGN CAPACITY. QUALITY PARAMETERS EVALUATED WILL INCLUDE BOD, COD AND SUSPENDED SOLIDS CONCENTRATION. DAILY COMPOSITE SAMPLE VALUES FOR A ONE-YEAR PERIOD WILL BE USED IN THE STUDY. FINAL OUTPUT WILL PRESENT RELATIONSHIP BETWEEN PROCESS DESIGN AND OPERATION AND COEFFICIENT OF VARIATION. COEFFICIENT OF VARIATION IS THEN DIRECTLY RELATED TO A SPECIFIC LEVEL OF PERFORMANCE AND RELIABILITY. THE IMPACT OF TOXIC ORGANICS ON THE STABILITY/RELIABILITY OF BENCH SCALE ACTIVATED SLUDGE UNITS WILL BE EVALUATED. THIS PROJECT IS AN EXTENSION OF A SMALLER PROJECT USING DATA FROM 28 ACTIVATED SLUDGE PLANTS VARYING IN SIZE FROM 0.6 TO 300 MGD. THE PREVIOUS WORK WAS FUNDED BY THE UNIVERSITY OF CALIFORNIA WATER RESOURCES CENTER AND USDI-OWRR AS B-173-CAL.

**PROJECT: 03267-ENVIRONMENTAL ASSESSMENT FOR PETROLEUM REFINERY - WASTEWATERS & RESIDUALS

STARTING/ COMPLETION DATE : 08/78 - 10/79 : FUNDING : ESTIMATED - FY78 / $ 80904
TASK CODE=L610C-13 **EPA=R805099 ** (GRANT) PRIOR FY /

EPA OFFICER.: FM PFEFFER EPA/ERL - ADA
INVESTIGATOR.: FS MANNING UNIV OF TULSA ENG & PHYS SCI/CHEM ENG
MILESTONES...: 03/79 -PREPARE STATE-OF-THE-ART REVIEWS
05/79 -ESTABLISH DESIGN CRITERIA
10/79 -FINAL REPORT
PLAN ID.....: (AP-610C)(DU-8118) MATERIALS PRODUCTION, INDUSTRIAL PT. SOURCES (WATER)
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: REGN-003267 SSIE-GMA 5281 EPA -R805099 TASK-L610C-13
ORD -RL10830-1078 MAND-10-01 AP -610C
DU -8118 LABT-ALN

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE GRANTEE WILL PREPARE AN ASSESSMENT OF "EMISSIONS" FROM THE PETROLEUM REFINING INDUSTRY. "EMISSIONS" ARE LIMITED TO THE FINAL EFFLUENT AND RESIDUALS FROM WASTEWATER TREATMENT. THIS WILL BE ACCOMPLISHED BY UTILIZING EXISTING INFORMATION AND RECOGNIZED EXPERTS PERTINENT TO THE FOLLOWING TOPICS FOR THE ASSESSMENT. A) STATE-OF-THE-ART DISCUSSIONS ON CHARACTERIZATION OF THE REFINING INDUSTRY AND ON TREATMENT AND CONTROL (T AND C) TECHNOLOGY; B) RATIONALE FOR CHARACTERIZING THE WASTEWATER AND RESIDUALS EMISSIONS; C) AVAILABLE EMISSION DATA; D) ENVIRONMENTAL IMPACT CRITERIA BASED ON EXISTING REGULATIONS; E) COMPARISON OF POLLUTANT EMISSIONS TO ENVIRONMENTAL IMPACT CRITERIA, AND STATEMENT AS TO T AND C AND; F) EVALUATION OF EXISTING AND EMERGING T AND C SYSTEMS RELATIVE TO "ACCEPTABLE" EMISSION LEVELS, AND IDENTIFICATION OF

**PROJECT: 00355-COREHOLE SPACING MODELS DEFINING POTENTIAL TOXIC ROCK BODIES IN COAL
SURFACE MINING
STARTING/ COMPLETION DATE : 06/78 - 02/80 : FUNDING : ESTIMATED - FY78 / $ 101000
TASK CODE=86238-503 **EPA=R805101-02 ** (GRANT) PRIOR FY77 / $ 109000
EPA OFFICER,: RC WILMOTH EPA/IERL - CINC
INVESTIGATOR,: JC HORNE UNIV OF SOUTH CAROLINA SCI & MATH/CHEM DEPT
JC FERM UNIV OF SOUTH CAROLINA SCI & MATH/CHEM DEPT
MILESTONES...: 10/78 -DRAFT REPORT
02/79 -FINAL REPORT
02/80 -FINAL REPORT RECEIVED
PLAN ID.....: (AP-6238)(DU-N105) ENERGY RESOURCE EXTRACTION AND HANDLING, SOLID FOSSIL FUELS
MANDATE.....: 30-99 L ENGINEERING 0008
CURR. RESULTS: CORE DRILLING PROGRAM INITIATED TO EXAMINE TOXICITY 0008
OF ROCK BODIES, AND DETERMINE SHAPE, THICKNESS AND 0008
LATERAL EXTENT OF LITHOLOGIES IN E. KENTUCKY. 0008
ORDIS CODES..: RECN-000355 SSIE-ZZ 198 EPA -R805101-02 TASK-86238-503
ORD -R810C30-3078 MAND-30-99 AP -6238
OU -N105 LABT-EMI

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
COMMENT.....: VII COREHOLE SPACING 0008
XV WATER POLLUTION PREVENTION 0008
ABSTRACT.....: MANY COAL SEAMS UNDERLIE POTENTIALLY TOXIC ROCK MATERIALS WHICH, WHEN USED IN RECLAMATION OR PLACED ON STRIP MINE SPOIL HEAPS, ADVERSELY AFFECT GROUND WATER CHEMISTRY AND PRODUCE ACID DRAINAGE. THESE ACID DRAINAGE PROBLEMS ARE RELATED TO THE OCCURRENCE OF PYRITIC SULFUR IN THE BLACK AND DARK GRAY SHALE OVERBURDEN. PREVIOUS STUDIES HAVE SHOWN THIS FRAMBOIDAL PYRITE TO BE RELATED TO DEPOSITIONAL ENVIRONMENT, AND IS PARTICULARLY ASSOCIATED WITH ROOF ROCK OF MARINE-BRACKISH ORIGIN. OF THE 28 LITHOLOGIES COMMONLY RECOGNIZED IN EASTERN KENTUCKY AND SOUTHERN WEST VIRGINIA, FOUR ARE POTENTIALLY TOXIC. A CORE DRILLING PROGRAM HAS BEEN INITIATED TO EXAMINE THE TOXICITY OF A NUMBER OF ROCK BODIES, AND TO DETERMINE THE SHAPE, THICKNESS AND LATERAL EXTENT OF THOSE LITHOLOGIES IN SELECTED AREAS IN EASTERN KENTUCKY. THIS PROGRAM WILL BE SUPPLEMENTED BY UTILIZING AND REFINING PREVIOUS RESULTS, AND BY CONTINUED MAPPING OF HIGHWAY EXPOSURES. THE MOST IMPORTANT AIM OF THE PROJECT IS THE DEVELOPMENT OF A MODEL WHICH WOULD PREDICT THE PRESENCE AND DISTRIBUTION OF POTENTIALLY TOXIC MATERIALS IN ADVANCE OF MINING, AND A RECOMMENDATION FOR COREHOLE SPACING AND CORE SAMPLING PROCEDURES IN AREAS WHERE SURFACE MINING IS PLANNED. ULTIMATELY IT SHOULD BE POSSIBLE TO CATALOGUE COAL SEAMS WITH TOXIC POTENTIAL.

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**PROJECT: 03673-GROWTH OF CLADOPHORA GLOMERATA - RELATIONSHIPS TO TRACE NUTRIENTS, HERBIVORES AND ECOSYSTEM FUNCTIONING
STARTING/ COMPLETION DATE : 12/77 - 02/80 : FUNDING : ESTIMATED - FY78 / $ 131000
TASK CODE=N608A-005 **EPA=R805106-02 ** (GRANT) PRIOR FY77 / $ 125000

EPA OFFICER,:	NA THOMAS	EPA/ERL - DULUTH	
INVESTIGATOR,:	R PATRICK	PHIL ACADEMY OF NAT SCI	LIMNOLOGY DEPT
	T HOTT	PHIL ACADEMY OF NAT SCI	LIMNOLOGY DEPT
	R LARSON	PHIL ACADEMY OF NAT SCI	LIMNOLOGY DEPT
	C RHYNE	PHIL ACADEMY OF NAT SCI	LIMNOLOGY DEPT

MILESTONES...: 02/80 -FINAL REPORT: EFFECT OF BIOLOGICAL CONTROL OF CLADOPHORA
PLAN ID.....: (AP-608A)(DU-8115) FRESHWATER ECOLOGICAL PROCESSESS & EFFECTS
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-003673 SSIE-GMA 4422 1 EPA -R805106-02 TASK-N608A-005
ORD -RN10830-1078 LABN-N769 -005 MAND-10-01
AP -608A DU -8115 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH

ABSTRACT.....: ONE OBJECTIVE OF THE PROPOSED PROGRAM IS TO INVESTIGATE THE EFFECT OF TRACE METAL AND ORGANIC PHOSPHORUS MICRONUTRIENTS ON THE GROWTH OF CLADOPHORA GLOMERATA. THE OTHER IS TO EVALUATE CLADOPHORA AS A FOOD SOURCE FOR SELECTED HERBIVORES AND OMNIVORES. THESE STUDIES WILL ALSO AID IN UNDERSTANDING HOW CLADOPHORA GROWTHS DEVELOP IN NATURE AND WILL PERMIT EVALUATION OF THE EFFECT OF CLADOPHORA GROWTH ON ECOSYSTEM STRUCTURE AND FUNCTIONING. CLADOPHORA GROWTH STUDIES OF TWO TYPES ARE PLANNED: MICRONUTRIENT ADDITION EXPERIMENTS WITH UNIALGAL CULTURES, AND COMPETITION EXPERIMENTS WITH OTHER ALGAE IN MICROCOSMS HELD UNDER NEAR NATURAL CONDITIONS IN A GREENHOUSE LABORATORY. FEEDING STUDIES WILL INCLUDE: FOOD PREFERENCE EXPERIMENTS AND GROWTH EXPERIMENTS AND ENERGETICS FUNCTIONING OF AQUATIC COMMUNITIES IN STREAMS WILL BE STUDIED IN EXPERIMENTAL ECOSYSTEM STREAMS, IN WHICH NATURAL COMMUNITIES CAN BE MAINTAINED, GROWTH EXPERIMENT STUDIES AND ECOSYSTEM STUDIES WILL BE CONDUCTED TO OBTAIN A BETTER UNDERSTANDING OF THE ROLE OF THE NUISANCE ALGA CLADOPHORA IN A GREAT LAKES ECOSYSTEM.

**PROJECT: 00370-PREDICTING ACID POLLUTION POTENTIAL FROM COAL STRIP MINES

STARTING/ COMPLETION DATE : 04/77 - 04/79 : FUNDING : ESTIMATED - FY78 / $ 66000
TASK CODE=B6238-606 **EPA=R805116-02 ** (GRANT) PRIOR FY77 / $ 86000
EPA OFFICER.: RC WILMOTH EPA/IERL - CINC
INVESTIGATOR.: FT CARUCCIO UNIV OF SOUTH CAROLINA SCI & MATH/CHEM DEPT
G GEIDEL UNIV OF SOUTH CAROLINA SCI & MATH/CHEM DEPT
MILESTONES...: 04/79 -FINAL REPORT
PLAN ID.....: (AP-6238)(DU-N105) ENERGY RESOURCE EXTRACTION AND HANDLING, SOLID FOSSIL FUELS
MANDATE.....: 30-99 L ENGINEERING 0008
ORDIS CODES..: RECN-000370 SSIE-ZZ 202 EPA -R805116-02 TASK-B6238-606
ORD -RB10C30-3078 MAND-30-99 AP -6238
DU -N105 LABT-EMI

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE PROJECT IS DESIGNED TO INVESTIGATE THE ENVIRONMENTAL IMPACT OF SURFACE CO-MINING. IN A FOUR-PHASE STUDY, ROCKS OVERLYING THE COAL AND COAL SAMPLES ARE TO BE COLLECTED FROM VARIOUS COAL MINING AREAS OF PENNSYLVANIA AND RETURNED TO THE LABORATORY FOR DETAILED CHEMICAL ANALYSES TO DETERMINE THEIR ACID AND ALKALINE PRODUCING POTENTIAL. THE LABORATORY STUDY INCLUDES SIMULATED WEATHERING TESTS, TOTAL SULFUR ANALYSES AND A DETAILED REFLECTED LIGHT MICROSCOPY STUDY OF THE VARIOUS MINERALOGICAL CONSTITUENTS OF THE SAMPLES. THE FOURTH PHASE OF THE STUDY IS A FIELD ORIENTED MONITORING APPROACH WHEREBY THE DRAINAGE EMANATING THROUGH VARIOUS PORTIONS OF THE BACKFILLED MINE SITE WILL BE COLLECTED AND ANALYZED. THE VARIOUS RELATIONSHIPS BETWEEN THE LABORATORY AND FIELD DATA REGARDING THE ACID OR ALKALINITY PRODUCTION LOADS WILL BE ASCERTAINED AND A PREDICTIVE MODEL AND TECHNIQUE FO

**PROJECT: 03670-ANALYSIS OF PLANKTONIC DIATOMS FROM OPEN LAKE MICHIGAN WATER

STARTING/ COMPLETION DATE : 04/77 - 03/79 : FUNDING : ESTIMATED - FY78 / $ 11038
TASK CODE=N608A-004 **EPA=R805133 ** (GRANT) PRIOR FY /
EPA OFFICER.: NA THOMAS UNKNOWN OFFICE
INVESTIGATOR.: RH BEETON UNIV OF MICHIGAN GRADUATE SCH
MILESTONES...: 02/78 -FINAL REPORT
PLAN ID.....: (AP-608A)(DU-B115) FRESHWATER ECOLOGICAL PROCESSESS & EFFECTS
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-003670 SSIE-GMA 4420 EPA -R805133 TASK-N608A-004
ORD -N10830-1078 LABN-N769 -004 MAND-10-01
AP -608A DU -B115

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-UNKN CODE
ABSTRACT.....: TWO-HUNDRED THIRTY-FIVE WATER SAMPLES WILL BE ANALYZED, QUALITATIVELY AND QUANTITATIVELY, FOR SPECIES OF PLANKTONIC DIATOMS. THE SAMPLES, NOW CONCENTRATED AND PRESERVED, WERE TAKEN YEAR-ROUND FROM 5 LOCATIONS ON 47 SEPARATE DATES FROM A WATER INTAKE OF A RAILROAD FERRY ON A TRANSECT ACROSS LAKE MICHIGAN. ANALYSIS OF THESE SAMPLES WILL IDENTIFY POSSIBLE DIFFERENCES BETWEEN THE DIATOMS OF INSHORE AND OFFSHORE WATERS AND PROVIDE THE FIRST YEAR-ROUND DATA OF THE DIATOM COMMUNITY IN OFFSHORE AS WELL AS INSHORE WATERS OF LAKE MICHIGAN. THE DIATOMS WILL BE CLEANED WITH NITRIC ACID AND PLACED ON 0.45 MICRON MEMBRANE FILTERS. A PORTION OF EACH FILTER WILL BE MADE TRANSPARENT WITH IMMERSION OIL AND EXAMINED AT 1000X UNDER PHASE CONTRAST. HYDRAX SLIDES WILL BE PREPARED, WHERE APPROPRIATE, FROM DUPLICATE SAMPLES TO AID IN SPECIES IDENTIFICATION. VARIOUS GRAPHICAL DISPLAYS AND BIOMETRIC ANALYSES OF THE DATA SUCH AS CONTOUR AND ISOMETRIC PROJECTION GRAPHS, PRINCIPAL COMPONENTS ANALYSIS AND HIERARCHICAL GROUPING WILL BE USED TO AID IN INTERPRETATION OF THE DATA. MULTIPLE REGRESSION AND CANONICAL CORRELATION ANALYSES WILL BE USED TO DETERMINE STRUCTURAL RELATIONSHIPS BETWEEN PHYSICOCHEMICAL PARAMETERS, PREVIOUSLY ANALYZED, AND THE DIATOMS.

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**PROJECT: 03671-ANALYSIS OF PLANKTONIC DIATOMS FROM OPEN LAKE MICHIGAN WATER

STARTING/ COMPLETION DATE : 04/77 - 05/79 : FUNDING : ESTIMATED - FY78 / $ 15400
TASK CODE=N608A-004 **EPA=R805133-01 ** (GRANT) PRIOR FY77 / $ 110000

EPA OFFICER.: NA THOMAS UNKNOWN OFFICE
INVESTIGATOR.: RH BEETON UNIV OF MICHIGAN GRADUATE SCH
MILESTONES...: 05/79 -FINAL REPORT: MAJOR DIATOM OF LAKE MICHIGAN ON A SEASONAL BASIS
PLAN ID.....: (AP=608A)(DU=8115) FRESHWATER ECOLOGICAL PROCESSESS & EFFECTS
MANDATE.....: 10=01 FEDERAL WATER PULLUTION CONTROL ACT
ORDIS CODES..: RECN=003671 SSIE=GMA 4420 1 EPA =R805133-01 TASK=N608A-004
ORD =N10830-1078 LABN=N769 -004 MAND=10-01
AP =608A DU =8115

PROJ STATUS..: PROJECT=ACTIVE DATA=ORIGINAL CATEGORY=UNKN CODE
ABSTRACT.....: TWO-HUNDRED THIRTY-FIVE WATER SAMPLES WILL BE ANALYZED, QUALITATIVELY AND QUANTITATIVELY, FOR SPECIES OF PLANKTONIC DIATOMS. THE SAMPLES, NOW CONCENTRATED AND PRESERVED, WERE TAKEN YEAR-ROUND FROM 5 LOCATIONS ON 47 SEPARATE DATES FROM A WATER INTAKE OF A RAILROAD FERRY ON A TRANSECT ACROSS LAKE MICHIGAN. ANALYSIS OF THESE SAMPLES WILL IDENTIFY POSSIBLE DIFFERENCES BETWEEN THE DIATOMS OF INSHORE AND OFFSHORE WATERS AND PROVIDE THE FIRST YEAR-ROUND DATA OF THE DIATOM COMMUNITY IN OFFSHORE AS WELL AS INSHORE WATERS OF LAKE MICHIGAN. THE DIATOMS WILL BE CLEANED WITH NITRIC ACID AND PLACED ON 0.45 MICRON MEMBRANE FILTERS. A PORTION OF EACH FILTER WILL BE MADE TRANSPARENT WITH IMMERSION OIL AND EXAMINED AT 1000X UNDER PHASE CONTRAST. HYDRAX SLIDES WILL BE PREPARED, WHERE APPROPRIATE, FROM DUPLICATE SAMPLES TO AID IN SPECIES IDENTIFICATION. VARIOUS GRAPHICAL DISPLAYS AND BIOMETRIC ANALYSES OF THE DATA SUCH AS CONTOUR AND ISOMETRIC PROJECTION GRAPHS, PRINCIPAL COMPONENTS ANALYSIS AND HIERARCHICAL GROUPING WILL BE USED TO AID IN INTERPRETATION OF THE DATA. MULTIPLE REGRESSION AND CANONICAL CORRELATION ANALYSES WILL BE USED TO DETERMINE STRUCTURAL RELATIONSHIPS BETWEEN PHYSICOCHEMICAL PARAMETERS, PREVIOUSLY ANALYZED, AND THE DIATOMS.

**PROJECT: 02655-METABOLISM OF CARBAMATE INSECTICIDES

STARTING/ COMPLETION DATE : 06/77 - 05/82 : FUNDING : ESTIMATED - FY78 / $ 65000
TASK CODE=H615F-7623 **EPA=R805143-02 ** (GRANT) PRIOR FY77 / $ 65000
EPA OFFICER,: MD JACKSON EPA/HERL - RTP
INVESTIGATOR,: HW DUROUGH UNIV OF KENTUCKY NAT RES & ENV PROT
MILESTONES,..: 07/77 -BIOAVAILABILITY OF PLANT RESIDUES
09/77 -CARBAMATE METABOLISM IN AMES ASSAY
11/77 -EXCRETION PATTERNS OF CARBARYL IN DOGS AND RATS
03/78 -EVALUATION OF CARBARYL METABOLISM IN DOGS AND RATS
03/78 -SYNTHESIS/CHEMICAL STABILITY OF NITROSOCARBAMATES
06/78 -SYNTHESIS OF NITROSO-CARBARYL IN RAT/GUINEA PIG
06/78 -ALTERATION OF HYDROLYTIC DETOXICATION OF CARBAMATE
PLAN ID.....: (AP-615F)(DU-E105) MULTI-ROUTE EXPOSURES: HEALTH IMPLICATIONS OF PESTICIDES (SUBSTITUTE CHEMICALS)
MANDATE.....: 10-06 FEDERAL INSECTICIDE, FUNGICIDE AND RODENTICIDE AC
ORDIS CODES..: RECN-002655 SSIE-ZZ 468 EPA -R805143-02 TASK-H615F-7623
ORD -RH10C30-1078 LABN-H615F-8623 MAND-10-06
AP -615F DU -E105 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: IN VIVO AND IN VITRO METABOLISM EXPERIMENTS WILL BE CONDUCTED WITH CARBAMATE INSECTICIDES IN BOTH ANIMAL AND PLANT SYSTEMS. COMPOUNDS SELECTED WILL BE THOSE ALREADY IN USE HAVING SPECIFIC METABOLISM PROBLEMS STILL EVIDENT, AND NEW PRODUCTS OF HIGH COMMERCIAL POTENTIAL AND/OR OF UNUSUAL CHEMICAL CONFIGURATION. METABOLITES WILL BE ISOLATED, IDENTIFIED WHENEVER POSSIBLE, AND SUBJECTED TO STUDIES DESIGNED TO ESTIMATE THEIR TOXICOLOGICAL SIGNIFICANCE. THESE LATTER STUDIES WILL INCLUDE DETERMINATIONS OF ACUTE TOXICITY TO RATS/MICE, ANTICHOLINESTERASE ACTIVITY, BIOAVAILABILITY AND FATE IN ANIMALS, AND MUTAGENIC/CARCINOGENIC POTENTIAL AS INDICATED BY BACTERIAL ASSAY SYSTEMS. OTHER STUDIES WILL BE UNDERTAKEN TO DETERMINE FACTORS WHICH SIGNIFICANTLY ALTER AN ANIMALS'S ABILITY TO DEGRADE CARBAMATE TOXICANTS. PLANS ARE TO EVALUATE EFFECTS OF OTHER CHEMICLAS, DIET, AND VARIOUS FORMS OF STRESS.

**PROJECT: 03008-A STUDY OF THE MECHANISM AND RATES OF VOLATILIZATION OF CONTAMINANTS FROM WATER BODIES
STARTING/ COMPLETION DATE : 08/77 - 12/80 : FUNDING : ESTIMATED - FY78 / $ 60000
TASK CODE=K609A-206 **EPA=R805150-01 ** (GRANT) PRIOR FY77 / $ 60000
EPA OFFICER.: SW KARICKHOFF EPA/ERL - ATHENS
INVESTIGATOR.: D MACKAY UNIV OF TORONTO DEPT OF CHEM ENGIN & APP CHEM
MILESTONES...: 12/77 -PUBLICATION ON LIQUID-PHASE CONTROLLED VOLATILIZATION RATES
12/78 -PUBLICATION ON METHOD OF MEASUREMENT OF HENRY'S LAW CONSTANTS
12/80 -PRED. EQUATIONS FOR VOLATILIZATION OF ORG. POLL. FROM NATURAL WAT ER
PLAN ID.....: (AP-609A)(DU-B106) SOURCES, PROCESSES & SYSTEMS
MANDATE.....: 30-99 ICAL ENGINEERING 0024
CURR. RESULTS: METHOD DEV. OF HENRY'S LAW CONSTANTS. 0024
MEASUREMENT OF H FOR SERIES OF HYDROPHOBIC POLLUTAN 0024
DETERMINATION OF ELECTROLYTE EFFECTS ON H 0024
DETERMINATION OF EFFECT OF WIND SPEED ON LIQUID PHA 0024
MASS TRANSFER RATES FOR HYDROPHOBIC POLLUTANTS. 0024
ORDIS CODES..: RECN-003008 SSIE-ZZ 342 EPA -R805150-01 TASK-K609A-206
ORD -RK10C30-3078 LABN-K775A-206 MAND-30-99
AP -609A DU -B106 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVE OF THE PROJECT IS TO DEVELOP A DEEPER QUANTITATIVE UNDERSTANDING OF THE PROCESSES BY WHICH SOME ENVIRONMENTAL CONTAMINANTS VOLATILIZE FROM WATER BODIES TO THE ATMOSPHERE. THE FINAL RESULT WILL BE A PREDICTIVE EQUATION(S) FOR VOLATILIZATION FROM NATURAL WATERS. ACCOMPLISHMENTS TO DATE INCLUDE: (1) METHOD DEVELOPMENT FOR MEASUREMENT OF HENRY'S LAW CONSTANTS (H). (2) MEASUREMENT OF H FOR A SERIES OF HYDROPHOBIC POLLUTANTS. (3) DETERMINATION OF ELECTROLYTE EFFECTS ON H. (4) DETERMINATION OF THE EFFECT OF WIND SPEED ON THE LIQUID PHASE MASS TRANSFER RATES FOR HYDROPHOBIC POLLUTANTS.

**PROJECT: 03386-DISSEMINATION OF INFORMATION CONCERNING ANIMAL PRODUCTION EFFECTS ON ENVIRONMENTAL QUALITY
STARTING/ COMPLETION DATE : 03/77 - 02/82 : FUNDING : ESTIMATED - FY78 / $ 96911
TASK CODE=L6170-28 **EPA=R805151-02 ** (GRANT) PRIOR FY77 / $ 42110

EPA OFFICER.: RD KREIS EPA/ERL - ADA
INVESTIGATOR.: ML ROWE EAST CENT OKLA ST UNIV
L MERRYMAN EAST CENT OKLA ST UNIV
MILESTONES...: 12/78 -VOLUME 6 OF ABSTRACTS
12/79 -VOLUME 7 OF ABSTRACTS
12/80 -VOLUME 8 OF ABSTRACTS
12/82 -VOLUME 9 OF ABSTRACTS AND COMPENDIUM OF ALL ABSTRACTS
PLAN ID.....: (AP-6170)(DU-) ANIMAL PRODUCTION
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
CURR. RESULTS: ONE VOLUME OF ABSTRACTS WHICH IS AT PRINTER, SECOND 0038
BEING PREPARED FOR PRINTING. 0038
ORDIS CODES..: RECN-003386 SSIE-GMA 3541 1 EPA -R805151-02 TASK-L6170-28
ORD -RL10830-1078 LABN-L7700-325 MAND-10-01
AP -6170 LABT-ALM

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: (A) THE PROPOSAL OUTLINES A PROJECT AIMED AT FACILITATING THE DISSEMINATION OF INFORMATION PERTAINING TO ANIMAL PRODUCTION'S IMPACT ON ENVIRONMENTAL QUALITY. THE PUBLICATIONS TO BE ABSTRACTED WILL BE EXAMINED FOR THE FOLLOWING TOPICS: (1) THE ENVIRONMENTAL IMPACT OF ANIMAL PRODUCTION ACTIVITIES ON WATER, GROUND WATER, AIR, SOIL SYSTEMS, HEALTH, AND AESTHETICS, (2) FEEDLOT, CONFINEMENT PEN, RANGELAND, AND PASTURE LAND MANAGEMENT, INCLUDING ANIMAL WASTE MANAGEMENT; THE USE OF CHEMICAL FERTILIZERS, MANURES, GREEN MANURES, AND SEWAGE SLUDGE IN CONJUNCTION WITH ANIMAL PRODUCTION AREAS; THE USE OF PESTICIDES IN CONJUNCTION WITH ANIMAL PRODUCTION AREAS OR ANIMAL PRODUCTION-RELATED AREAS; AND POLLUTION EFFECTS OF CROP RESIDUES, SOIL LOSSES AND SEDIMENTS PRODUCTION FROM ANIMAL PRODUCTION AREAS TO ANIMAL PRODUCTION-RELATED AREAS, (3) LEGAL, ECONOMIC, AND SOCIAL CONSTRAINTS, (4) RESEARCH AND DEVELOPMENT. THE PROJECT STAFF WILL MAINTAIN A FILE COPY OF ALL ARTICLES WHICH APPEAR IN THE BIBLIOGRAPHY. UPON REQUEST TO THE PROJECT STAFF, USERS WILL BE SUPPLIED A COPY OF INDIVIDUAL ARTICLES AT COST. (B) THIS WILL BE ACCOMPLISHED BY SEARCHING THE LITERATURE, ABSTRACTING PERTINENT PUBLICATIONS, PUBLISHING WATER-RELATED ABSTRACTS IN WATER RESOURCES INFORMATION ABSTRACTS, AND SUBMITTING A CUMULATIVE BIBLIOGRAPHY OF ABSTRACTS TO THE ENVIRONMENTAL PROTECTION AGENCY FOR PUBLICATION AT THE END OF EACH BUDGET PERIOD. (C) THIS PROJECT HAS PRODUCED ONE VOLUME OF ABSTRACTS WHICH IS AT THE PRINTER AND A SECOND V

**PROJECT: 03680-ATMOSPHERIC INPUT OF TRACE METALS TO LAKE MICHIGAN

STARTING/ COMPLETION DATE : 08/77 - 10/78 : FUNDING : ESTIMATED - FY78 / $ 20000
TASK CODE=N608A-010 **EPA=R805172-01 ** (GRANT) PRIOR FY77 / $ 21400

EPA OFFICER.: MD MULLIN EPA/ERL - DULUTH
INVESTIGATOR.: SJ EISENREICH UNIV OF MINNESOTA DEPT OF MECH ENG
MILESTONES...: 10/78 -FINAL REPORT
PLAN ID.....: (AP-608A)(DU-B115) FRESHWATER ECOLOGICAL PROCESSESS & EFFECTS
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-003680 SSIE-ZZ 245 EPA -R805172-01 TASK-N608A-010
ORD -RN10C30-1078 LABN-N769 -010 MAND-10-01
AP -608A DU -B115 LABT-MEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVE OF THE RESEARCH PROJECT IS TO DETERMINE LOADINGS AND DEPOSITION RATES OF SELECTED TRACE METALS TO LAKE MICHIGAN FROM ATMOSPHERIC SOURCES. THE TRACE METAL CONTENT OF MONTHLY-INTEGRATING, BULK PRECIPITATION SAMPLES COLLECTED AT 22 LAND-BASED STATIONS, 2 IN-LAKE BUOY COLLECTORS AND 2 WET/DRY UNITS WILL BE MEASURED. THE BULK PRECIPITATION SAMPLES WERE COLLECTED AT SITES IN WISCONSIN, ILLINOIS, INDIANA AND MICHIGAN BORDERING LAKE MICHIGAN FROM JULY, 1975 TO DECEMBER, 1976. TRACE METALS (ZN, CD, PB, CU, NI, FE, CO AND MN) WILL BE ANALYZED BY ATOMIC ABSORPTION SPECTROPHOTOMETRY (AAS), WITH A PERKIN-ELMER MODEL 360 AAS EQUIPPED WITH AN HGA-2100 GRAPHITE FURNACE AND A DEUTERIUM BACKGROUND CORRECTOR. TRACE METAL DATA WILL BE REPORTED IN CONCENTRATION UNITS (MICRON G/L), DEPOSITION RATES (MICRON G/CM2/MONTH) AND IN TOTAL LOADINGS TO THE LAKE ON AN ANNUAL BASIS. STATISTICAL TECHNIQUES WILL BE USED TO IDENTIFY SOURCES WHERE POSSIBL

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**PROJECT: 00271-WOOD TREATING WASTE RECYCLE SYSTEM

STARTING/ COMPLETION DATE : 06/76 - 10/78 : FUNDING : ESTIMATED - FY78 / $ 13000
TASK CODE=R6108-607 **EPA=S805179-01 ** (GRANT) PRIOR FY77 / $ 50000

EPA OFFICER.: V DALLONS
INVESTIGATOR.: PV HULDEN
JA MACKIE
W STOTT
EPA/IERL - CINC
PAC WOOD TREATING CORP
PAC WOOD TREATING CORP
MUGUL CORP

MILESTONES...: 10/77 -QUARTERLY REPORT
01/78 -QUARTERLY REPORT
04/78 -QUARTERLY REPORT
07/78 -QUARTERLY REPORT
10/78 -DRAFT FINAL REPORT
01/79 -FINAL REPORT RECEIVED

PLAN ID.....: (AP-6108)(DU-8118) MATERIALS PROCESSING, INDUSTRIAL PT. SOURCES (WATER)
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
CURR. RESULTS: PHYSICAL FACILITY UNDER CONSTRUCTION.
ORDIS CODES..: RECN-000271 SSIE-ZZ 434 EPA -S805179-01 0006 TASK-R6108-607
ORD -RH10C30-1078 MAND-10-01 AP -6108
DU -8118 LABT-EMI

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVE IS TO EVALUATE A FULL SIZED RECYCLE SYSTEM FOR LIQUID WASTES FROM A WOOD PRESERVING PLANT WHERE THE WASTES ARE CONCENTRATED BY ULTRAFILTRATION AND REVERSE OSMOSIS WITH THE CONCENTRATE INCINERATED AND THE PERMEATE CONSUMED AS BOILER FEED WATER. THE APPROACH CONSISTS OF COLLECTING DATA ON THE FEED, REJECT, AND PRODUCT AND MAINTAINING A LOG OF SYSTEM PERFORMANCE, QUANTITIES PROCESSED, OPERATING AND MAINTENANCE EXPENSE, AND OPERATING PROBLEMS. THE DATA WILL BE TABULATED AND PUBLISHED IN THE AMERICAN WOOD PRESERVERS ASSN. (AWPA) PROCEEDINGS. ALSO THE RESULTS WILL BE PUBLISHED IN EPA TECHNICAL REPORT SERIES. THE PHYSICAL FACILITY IS UNDER CONSTRUCTION AS OF THIS DATE. START-UP IS SCHEDULED FOR APRIL, 1977.

**PROJECT: 00457-FULL-SCALE DEMONSTRATION OF HYPERFILTRATION FOR CLOSED-CYCLE OPERATION IN TEXTILE

STARTING/ COMPLETION DATE : 06/77 - 04/81 : FUNDING : ESTIMATED - FY78 / $ 135000
TASK CODE=R6248-374 **EPA=S805182-01 ** (GRANT) PRIOR FY77 / $ 190000

EPA OFFICER.: R MOURNIGHAN EPA/IERL - CINC
INVESTIGATOR.: CA BRANDON RIEGEL TEXTILE CORP LA FRANCE DIV
JE BOSTIC RIEGEL TEXTILE CORP LA FRANCE DIV
RK TEED RIEGEL TEXTILE CORP LA FRANCE DIV
JJ PORTER RIEGEL TEXTILE CORP LA FRANCE DIV
MILESTONES...: 04/81 -FINAL REPORT RECEIVED
PLAN ID.....: (AP=6248)(OU=L110) ENVIRONMENTAL ASPECTS OF ENERGY CONSERVATION/ADVANCED ENERGY
FINAL OUTPUT.: DETAILED DESIGN FOR TEXTILE WASTEWATER TREATMENT, OPERATIONS & CAPITAL CISTS, DOC. OF ENERGY SAVINGS OF REVERSE OSMOSIS SYSTEM COMPARED TO CONV. WASTE TREATMENT METH. & EVAL OF CHEM. RECYCLE IN DYING PROCESS. 0016 0016 0016 0016 0016 0016
MANDATE.....: 30-99 H POLLUTION
ORDIS CODES..: RECN=000457 SSIE-GMA 4715 1 EPA =S805182-01 TASK=R6248-374
ORD =RB10830-3078 MAND=30-99 AP =6248
OU =L110 LABT=EMI

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THIS IS ONE OF A MULTI-PART PROJECT WHOSE SUMMARY MAY BE IDENTICAL TO OTHERS. THE OBJECTIVES OF THIS PROJECT ARE TO DEMONSTRATE THE ECONOMIC AND TECHNICAL ADVANTAGES TO A FULL SCALE REVERSE OSMOSIS (HYPERFILTRATION) SYSTEM FOR CLOSED CYCLE OPERATION OF A TEXTILE DYING AND FINISHING PLANT. INVOLVED IS THE DESIGN, INSTALLATION, AND TWELVE-MONTH OPERATION OF A REVERSE OSMOSIS TREATMENT SYSTEM FOR THE HOT WASTEWATER FROM EITHER A CONTINUOUS DYE RANGE OR A GROUP OF TEN ATMOSPHERIC DYE BECKS. THE TWO TYPES OF EQUIPMENT ARE TYPICAL OF THE TWO BROAD CATEGORIES OF TEXTILE PROCESSING: CONTINUOUS AND BATCH. A CONCEPTUAL DESIGN WILL BE DEVELOPED FOR EACH PROCESS AND THE ONE APPEARING TO BE THE MOST ECONOMICALLY VIABLE WILL BE DEMONSTRATED. OUTPUTS FROM THIS PROGRAM CONSIST OF: A DETAILED DESIGN FOR TEXTILE WASTEWATER TREATMENT BY REVERSE OSMOSIS, DETAILED OPERATIONS AND CAPITAL COSTS, DOCUMENTATION OF ENERGY SAVINGS OF THE REVERSE OSMOSIS SYSTEM COMPARED TO CONVENTIONAL WASTE TREATMENT METHODS AND EVALUATION OF CHEMICAL (DYES, SALT) RECYCLE IN THE DYING PROCESS.

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                                    UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
      REPORT: ORDCONV (VERSION V2.0)     * OFFICE OF RESEARCH AND DEVELOPMENT *
                                          LIST OF PROJECTS FROM MATCHED GRANT SYSTEM INPUT
      RUN DATE: 06/29/79                 * O R D I S   D A T A   E X T R A C T *                                    PAGE-   136

**PROJECT: 03111-INTERACTIONS OF METAL IONS WITH ORGANIC LIGANDS IN NATURAL WATERS

                    STARTING/ COMPLETION DATE : 04/77 - 04/80 :   FUNDING :  ESTIMATED - FY78  / $   63732
                    TASK CODE=K6178-214     **EPA=R805183      ** (GRANT)      PRIOR       FY77  / $   64992
 EPA  OFFICER.: DS BROWN                    EPA/ERL - ATHENS
 INVESTIGATOR.: DF NATUSCH                  COLORADO STATE UNIV                  CHEM/ELEC ENG DEPTS
                RK SKOGERBOE                COLORADO STATE UNIV                  CHEM/ELEC ENG DEPTS
                JA OSTERYOUNG               COLORADO STATE UNIV                  CHEM/ELEC ENG DEPTS
                SA WILSON                   COLORADO STATE UNIV                  CHEM/ELEC ENG DEPTS
 MILESTONES...: 10/77 -PUBLICATION ON RING-DISC ELECTRODE SYSTEM
                04/78 -PUBLICATION ON INORGANIC AND TOTAL MERCURY METHOD
                05/80 -FINAL REPORT ON METAL COMPLEXATION CONSTANTS
 PLAN ID......: (AP-6178)(DU-     )  NONIRRIGATED CROP PRODUCTION
 FINAL OUTPUT.: DATA SET OF STABILITY CONSTANTS FOR KEY METAL-ORGAN                  0027
                COMPLEXES AND MATHEMATICAL TREATMENT OF PARAMETERS.                  0027
 MANDATE......: 30-99 TRO-ANALYTICAL CHEMISTRY                          0027
 CURR. RESULTS: DEV. OF NEW ANALYTICAL METHODOLOGIES FOR MEASURING                   0027
                BINDING CONSTANTS.                                                   0027
 ORDIS CODES..: RECN-003111          SSIE-GMA  4011 1      EPA -R805183          TASK-K6178-214
                ORD -RK10830-3078    LABN-K7708-214        MAND-30-99
                AP  -6178            LABT-ALW

 PROJ STATUS..: PROJECT-ACTIVE       DATA-ORIGINAL         CATEGORY-RESEARCH
 COMMENT......: PROJECT COVERS METAL-ORGANIC INTERACTIONS IN NAT. S                  0027
 ABSTRACT.....: THE GENERAL OBJECTIVES OF THIS INVESTIGATION ARE TO DEVELOP METHODS FOR THE CHARACTERIZATION OF THE
                BINDING OF METALS BY ORGANIC LIGANDS COMMON IN NATURAL WATERS AND TO APPLY THESE METHODS TO THE
                DETERMINATION OF METAL BINDING PARAMETERS. SPECIFIC AIMS INCLUDE: (1) DEVELOPMENT OF METHODS FOR
                DIRECT SENSING OF METAL SPECIES; (2) ISOLATION AND CHARACTERIZATION OF METAL-LIGAND COMPLEXES; (3)
                MEASUREMENT OF PERTINENT METAL BINDING PARAMETERS FOR COMMON ORGANIC LIGANDS. THE APPROACH INCLUDES
                DEVELOPMENT OF ELECTROCHEMICAL, SPECTROCHEMICAL, CHROMATOGRAPHIC, AND CHEMICAL TREATMENT PROCEDURES
                TO BE USED IN COMBINATION FOR THE CHARACTERIZATION OF METAL-ORGANIC SPECIES. AS THE PROCEDURES
                EVOLVE THEY ARE BEING USED TO STUDY BOTH REAL AND SIMULATED NATURAL WATER SYSTEMS. FINAL OUTPUTS
                WILL INCLUDE A DATA SET OF STABILITY CONSTANTS FOR KEY METAL-ORGANIC COMPLEXES AND A MATHEMATICAL
                TREATMENT RELATING THESE PARAMETERS WHICH IS DESIGNED TO AID IN EVALUATING THE RELATIVE IMPORTANCE
                OF METAL-ORGANIC INTERACTIONS IN NATURAL WATERS. PROGRESS TO DATE HAS CENTERED ON DEVELOPMENT OF
                SEVERAL NEW ANALYTICAL METHODOLOGIES NECESSARY FOR MEASURING THE DESIRED BINDING CONSTANTS. THESE
                INCLUDE A RING-DISC ELECTRODE SYSTEM FOR DIRECT METAL ANALYSIS, A RAPID SEPARATION AND ANALYSIS
                METHOD FOR MERCURY, AND A MODIFIED FLORENCE AND BATLEY METAL SPECIATION SCHEME.
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**PROJECT: 03716-CHRONIC BIOASSAYS WITH DAPHNIDS AS A TOOL FOR PREDICTING THE TOXICITY OF
COMPLEX INDUSTRIAL EFFLUENT TO THE BIOTA OF A RECEIVING STR
STARTING/ COMPLETION DATE : 07/77 - 07/79 : FUNDING : ESTIMATED - FY78 / $ 21500
TASK CODE=N608A-089 **EPA=R805193-02 ** (GRANT) PRIOR FY77 / $ 21000
EPA OFFICER,: WB HORNING EPA/ERL - DULUTH
INVESTIGATOR,: RW WINNER MIAMI UNIV SCH OF ARTS & SCI
MILESTONES...: 06/78 -CREATE MODEL FOR DAPHNIA BIOASSAYS TO PREDICT IMPACT OF COMPLEX
06/79 -TEST RELIABILITY OF MODEL
07/79 -COMPLETION OF FINAL REPORT
PLAN ID.....: (AP=608A)(DU=B115) FRESHWATER ECOLOGICAL PROCESSESS & EFFECTS
MANDATE.....: 30-99 OGY=CHEMISTRY 0046
CURR. RESULTS: RESEARCH IN 1ST YEAR & PROPOSAL REQ. 2ND YEAR SUPPO 0046
SUBMITTED. PRELIM. DATA COLLECTED & BIOASSAYS RUN 0046
WATER FROM 5 STREAM STATIONS. 0046
ORDIS CODES..: RECN=003716 SSIE-GMA 4412 1 EPA -R805193-02 TASK-N608A-089
ORD -RN10830-3078 MAND-30-99 AP -608A
DU -B115 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVES: TO DETERMINE WHETHER CHRONIC EFFLUENT BIOASSAYS WITH DAPHNIDS CAN BE USED TO DETERMINE HOW MUCH THAT EFFLUENT MUST BE DILUTED BEFORE IT WILL NOT HAVE AN UNACCEPTABLE EFFECT ON THE BIOTA OF THE RECEIVING STREAM. APPROACH: FIVE-WEEK BIOASSAYS WILL BE CONDUCTED WITH DILUTIONS OF A COMPLEX INDUSTRIAL EFFLUENT USING DAPHNIA MAGNA AND D. PARVULA. THESE WILL BE COMPARED TO CHRONIC BIOASSAYS RUN IN UNDILUTED STREAM WATER COLLECTED FROM STATIONS DOWNSTREAM FROM THE POINT OF EFFLUENT DISCHARGE. BOTH KINDS OF BIOASSAYS WILL BE COMPARED TO MACROINVERTEBRATE, FISH AND PERIPHYTIC COMMUNITIES AT DOWNSTREAM STATIONS IN THE RECEIVING WATERS. TOXICANT CONCENTRATIONS AT THE SAMPLING STATIONS WILL BE COMPARED TO EFFLUENT DILUTIONS CAUSING NO ADVERSE EFFECT ON BIOASSAY TEST ORGANISMS TO DETERMINE WHETHER THE BIOASSAYS CAN PREDICT WHERE THE STREAM BIOTA WILL HAVE RECOVERED FROM THE EFFLUENT STRESS. CURRENT PLANS AND PROGRESS: THIS RESEARCH IS NOT IN ITS FIRST YEAR AND A PROPOSAL REQUESTING A SECOND YEAR OF SUPPORT HAS BEEN SUBMITTED TO E.P.A. PRELIMINARY DATA HAS BEEN COLLECTED ON COMMUNITY STRUCTURE AT FIVE STATIONS IN THE RECEIVING STREAM AND BIOASSAYS HAVE BEEN RUN ON EFFLUENT DILUTIONS AND WATER FROM EACH OF THE FIVE STREAM STATIONS. SUCH DATA COLLECTION WILL CONTINUE TO DOCUMENT SEASONAL CHANGES IN EFFLUENT TOXICITY AND IN COMMUNITY SENSITIVITY.

**PROJECT: 03883-GENETIC VARIATION AND RESISTENCE TO CARCINOGENS IN NATURAL WATERS

STARTING/ COMPLETION DATE : 06/77 - 06/80 : FUNDING : ESTIMATED - FY78 / $ 51100
TASK CODE=Q625F-1-02 **EPA=R805195-02 ** (GRANT) PRIOR FY77 / $ 91100
EPA OFFICER,: NL RICHARDS EPA/ERL -GULF BREEZE
INVESTIGATOR,: RJ SCHULTZ UNIV OF CONNECTICUT GRADUATE SCH
MILESTONES...: 06/79 -PRELIMINARY EVALUATION OF CARCINOGEN METHODOLOGY
06/80 -EVALUATION OF METHODS FOR CARCINOGEN SCREENING
PLAN ID.....: (AP=625F)(DU=N140) AIR, WATER AND MULTI-ROUTE EXPOSURE & THEIR EFFECTS (HEALTH)
ORDIS CODES..: RECN=003883 SSIE-ZZ 235 EPA -R805195-02 TASK-Q625F-1-02
AP -625F DU -N140 LABT-HEE
PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY- UNKN
ABSTRACT.....: THE OBJECTIVE OF THIS GRANT IS TO EVALUATE THE FEASIBILITY OF USING ISOGENIC FISH TO DETECT CARCINOGENS. THE VALIDATED BIOASSAY SYSTEM WOULD BE TO TEST THE CARCINOGENIC PROPERTIES OF COMPOUNDS FROM PETROLEUM AND SHALE OIL.

**PROJECT: 01035-ENVIRONMENTAL CONTAMINANTS - EFFECTS ON TUMOR GROWTH AND IMMUNITY

STARTING/ COMPLETION DATE : 07/77 - 07/80 : FUNDING : ESTIMATED - FY78 / $ 77382
TASK CODE=D607A-027 **EPA=R805210-02 ** (GRANT) PRIOR FY77 / $ 105475

EPA OFFICER.: P HEFFERNAN EPA/HERL - CINC
INVESTIGATOR.: LD KOLLER OREGON STATE UNIV SCH OF VET MED
NI KERKVLIET OREGON STATE UNIV SCH OF VET MED
MILESTONES...: 08/78 -COMPLETE INFLUENCE OF CD ON TUMOR GROWTH
02/79 -COMPLETE CD CELLULAR CYTOTOXICITY STUDIES
08/79 -COMPLETE INFLUENCE OF AS ON TUMOR GROWTH
02/80 -COMPLETE AS CELLULAR CYTOTOXICITY STUDIES
07/80 -CD AND AS INFLUENCE ON A NON-VIRAL INDUCED TUMOR AND DEV. OF IMMU NITY
PLAN ID.....: (AP-607A)(DU-R103) HEALTH EFFECTS: TREATMENT & DISPOSAL OF WASTEWATER & SLUDGE
MANDATE.....: 10-13 SOLID WASTE DISPOSAL ACT
CURR. RESULTS: INHIBITION OF CYTOTOXICITY BY CD NOT FOUND. 0002
ORDIS CODES..: RECN-001035 SSIE-GMA 4543 1 EPA -R805210-02 TASK-D607A-027
ORD -RD10830-1078 MAND-10-13 AP -607A
DU -R103 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE PROPOSED STUDY WILL DETERMINE THE EFFECTS ARSENIC AND CADMIUM HAVE ON THE IMMUNE RESPONSE OF MICE TO A GROWING TUMOR AND THE EFFECTS OF CONTAMINANT-INDUCED IMMUNE ALTERATION ON THE INCIDENCE AND GROWTH RATE OF TUMORS IN EXPOSED ANIMALS. SEVERAL PARAMETERS OF IMMUNITY WILL BE ASSESSED AT VARIOUS TIMES AFTER TUMOR INOCULATION. ASSAYS WILL INCLUDE LYMPHOCYTE-MEDIATED CYTOTOXICITY, SERUM-BLOCKING ACTIVITY, LYMPHOKINE PRODUCTION, AND LYMPHOCYTE BLASTOGENESIS. IN ADDITION, CONTAMINANT-EXPOSED ANIMALS WILL BE MONITORED FOR CHANGES IN IN VIVO TUMOR GROWTH PARAMETERS (REGRESSION, PROGRESSION, METASTASES FORMATION). CADMIUM AND ARSENIC WILL BE ADMINISTERED IN THE DRINKING WATER FOR 15 WEEKS PRIOR TO TUMOR INOCULATION AND IMMUNE TESTING. SUB-CLINICAL DOSES OF THE CONTAMINANTS WILL BE INCLUDED. TWO TUMOR SYSTEMS, A METHYLCHOLANTHRENE-INDUCED AND A MOLONEY VIRUS-INDUCED, WILL BE UTILIZED TO COMPARE THE DIFFERENCES IN IMMUNE FUNCTION BETWEEN A CHEMICALLY INDUCED AND A VIRUS INDUCED TUMOR IN THE PRESENCE OF CADMIUM AND ARSENIC. A HIGHLY SIGNIFICANT DOSE DEPENDENT INHIBITION GMSB-6 TUMOR GROWTH IN CD EXPOSED MICE. THE EFFECT OF CD EXPOSURE ON CELL MEDIATED CYTOTOXICITY WAS NOT APPARENT. INHIBITION OF CYTOTOXICITY BY CD WAS NOT FOUND.

304A

**PROJECT: 03247-MANUAL OF WATER WELL MAINTENANCE AND REHABILITATION TECHNOLOGY

STARTING/ COMPLETION DATE : 07/77 - 06/79 : FUNDING : ESTIMATED - FY78 / $ 108152
TASK CODE=L6098-18 **EPA=R805211-02 ** (GRANT) PRIOR FY77 / $ 91848

EPA OFFICER.: MR SCALF EPA/ERL - ADA
INVESTIGATOR.: JH LEHR NATL WAT WELL ASSN RES FAC
H HEISS NATL WAT WELL ASSN RES FAC
TE GASS NATL WAT WELL ASSN RES FAC
MILESTONES...: 09/79 -INTERIM REPORT ON ALLUVIAL WELLS
03/80 -FINAL REPORT
PLAN ID.....: (AP=6098)(DU=B106) PLAN 6098
MANDATE.....: 20-99 ONAL WATER WELL ASSN, WORTHINGTON, OH 0032
CURR. RESULTS: DATA AQUISITION PHASE COMPLETED, FIRST DRAFTS ON RE 0032
PERFORMANCE PREPARED AND BEING REVIEWED. 0032
ORDIS CODES..: RECN=003247 SSIE-GMA 4591 1 EPA -R805211-02 TASK-L6098-18
ORD -RL10830-2078 LABN=L614C-009 MAND-20-99
AP -6098 DU -8106 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: RISING ENERGY AND MATERIAL COSTS MAKE IT DESIRABLE TO MAINTAIN WATER WELLS AT THEIR OPTIMUM LEVEL OF PERFORMANCE, THEREBY INCREASING WELL LIFE AND KEEPING PUMPING COSTS STABLE. THE REPLACEMENT COSTS OF WELLS HAVE INCREASED TO SUCH A POINT THAT MAINTENANCE AND REHABILITATION PROGRAMS ARE BECOMING MORE FREQUENTLY APPLIED TO DOMESTIC AND SMALL MUNICIPAL WELLS,THE NATIONAL WATER WELL ASSOCIATION PROPOSES THE DEVELOPMENT OF A MANUAL ON WATER WELL REHABILITATION AND MAINTENANCE TECHNOLOGY THAT WOULD DESCRIBE IN DETAIL THE FACTORS THAT WOULD AFFECT WELL PROBLEMS AND THE TECHNOLOGY AND METHODOLOGY OF WELL SERVICING. PICTURES AND FIGURES WOULD BE LIBERALLY USED TO ENHANCE THE CLAITY OF THE TEXT. IN ADDITION, A SUBSTANTIAL SECTION OF CASE HISTORIES WILL BE PROVIDED TO ASSIST THE READER IN DEVELOPING LINKS BETWEEN CERTAIN SYMPTOMS OF WELL DETERIORATION, METHODS OF EVALUATION, AND TREATMENT REQUIRED FOR THE WELL. NEW METHODOLOGIES AND EQUIPMENT FOR WELL MAINTENANCE AND REHABILITATION WILL BE TESTED IN THE FIELD TO INSURE THE VALIDITY OF THEIR PERFORMANCE CLAIMS. THE NATIONAL WATER WELL ASSOCATION AS BOTH A TRADE AND PROFESSIONAL ASSOCIATION IS IN AN IDEAL POSITION TO DEVELOP A MANUAL OF THIS NATURE. IT HAS A STAFF OF WATER WELL TECHNOLOGY EXPERTS AND AN EXTENSIVE LIBRARY OF GROUND WATER SCIENCE. IT HAS ACCESS TO THE IDEAS AND EXPERIENCE OF APPROXIMATELY 5,000 MEMBERS IN ADDITION TO BEING IN A POSITION TO UNDERSTAND THE REQUIREMENTS OF PERSONS TO WHOM THIS MANUAL WOULD BE DIRECTED. MOST OF THE DATA ACQUISITION PHASE HAS BEEN COMPLETED, INCLUDING A SURVEY OF PERSONS AND COMPANIES INVOLVED IN WELL SERVICING IN BOTH THE GROUND WATER AND PETROLEUM INDUSTRIES. FIRST DRAFTS OF THE CHAPTERS DEALING WITH CAUSES OF REDUCED WELL PERFORMANCE AND METHODS OF EVALUATING THE PHYSICAL AND OPERATIONAL CONDITION OF A WELL HAVE BEEN PREPARED AND ARE IN THE REVIEW PROCESS.

**PROJECT: 02251-DEVELOP TAPERED ELEMENT OSCILLATING MICRO BALANCE (TEOM) FOR AMBIENT MASS MEASUREMENT
STARTING/ COMPLETION DATE : 08/77 - 09/79 : FUNDING : ESTIMATED - FY78 / $ 24000
TASK CODE=G7128-8E-47 **EPA=R805222-02 ** (GRANT) PRIOR FY77 / $ 19040

EPA OFFICER..: C LEWIS EPA/ESRL - RTP
INVESTIGATOR..: H PATASHNICK DUDLEY OBSERVATORY
G RUPPRECHT DUDLEY OBSERVATORY
MILESTONES...: 09/77 -GRANT AWARDED
09/78 -FIRST PROTOTYPE COMPLETED
09/79 -EVAL. COMPL. - FEAS. OF A NEW TYPE OF AMBIENT AEROSOL MASS MON
PLAN ID.....: (AP-7128)(OU-A130) CHAR. AND MEASUREMENT METHODS DEVELOPMENT (AIR)
FINAL OUTPUT..: AN EVALUATED PROTOTYPE INSTRUMENT FORM WHICH THE 0046
FEASIBILITY OF THE CONCEPT CAN BE JUDFGED. 0046
MANDATE.....: 10-02 CLEAN AIR ACT
CURR. RESULTS: A SATISFACTORY METHOD FOR COLLECTION OF AEROSOL ON 0046
MICROBALANCE HAS BEEN DEMONSTRATED: FILTRATION THR 0046
FILTER CARTRIDGE ATTACHED TO THE END OF THE HOLLOW 0046
ELEMENT PORTION OF THE MICROBALANCE. A 5 LITER/MIN 0046
FLOW RATE HAS BEEN ACHIEVED. 0046
ORDIS CODES..: RECN-002251 SSIE-GMA 3789 1 EPA -R805222-02 TASK-G7128-8E-47
ORD -RG10830-1078 LABN-G7128-88-28 MAND-10-02
AP -7128 OU -A130 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVE/APPROACH: TO DEVELOP AN INSTRUMENT FOR REAL-TIME MEASUREMENT OF AMBIENT AEROSOL MASS. THE INSTRUMENT IS BASED ON A NEWLY DEVELOPED DEVICE -- TAPERED ELEMENT OSCILLATING MICROBALANCE -- WHICH IS SIMILAR TO A CLASSICAL QUARTZ CRYSTAL MICROBALANCE, BUT WITHOUT MANY OF THE LATTER'S PROBLEMS. FINAL OUTPUTS: AN EVALUATED PROTOTYPE INSTRUMENT FROM WHICH THE FEASIBILITY OF THE CONCEPT CAN BE JUDGED. RESULTS TO DATE: A SATISFACTORY METHOD FOR COLLECTION OF AEROSOL ON THE MICROBALANCE HAS BEEN DEMONSTRATED: FILTRATION THROUGH A MEMBRANE FILTER CARTRIDGE ATTACHED TO THE END OF THE HOLLOW TAPERED ELEMENT PORTION OF THE MICROBALANCE, A 5 LITER/MINUTE FLOW RATE HAS BEEN ACHIEVED.

**PROJECT: 01528-SULFUR DIOXIDE OXIDATION IN SCRUBBER SYSTEMS

STARTING/ COMPLETION DATE : 07/77 - 06/79 : FUNDING : ESTIMATED - FY78 / $ 88927
TASK CODE=F624A-046 **EPA=R805227-02 ** (GRANT) PRIOR FY77 / $ 79641

EPA OFFICER.: RH BORGWARDT EPA/IERL - RTP
INVESTIGATOR.: JL HUDSON UNIV OF VIRGINIA ENG & APPL SCI/CHEM ENG DEPT
MILESTONES...: 09/77 -CONSTRUCT REACTOR AND ASSEMBLE APPARATUS
11/77 -LOW LEVEL CATALYST STUDIES IN FLOW REACTOR
02/78 -BISULFITE OXIDATION IN BATCH REACTOR
06/78 -BISULFITE OXIDATION IN FLOW REACTOR
09/78 -EFFECT OF OXIDATION INHIBITORS
10/78 -CONCENTRATION EFFECTS
03/79 -DEVELOP MODEL FOR OXIDATION IN SLURRIES
08/79 -FINAL REPORT: QUANT. EFF. OF PROCESS VARIABLES ON OXID.
PLAN ID.....: (AP-624A)(DU-L110) UTILITY AND INDUSTRIAL POWER PRODUCTION
FINAL OUTPUT.: MATHEMATICAL MODEL RELATING PRINCIPAL PROCESS VARIA 0026
TO SULFUR DIOXIDE OXIDATION IN FGD SCRUBBERS WILL B 0026
AS FINAL REPORT. 0026
MANDATE.....: 30-99 REGENERABLE FGD 0026
CURR. RESULTS: BATCH REACTOR EXPERIMENTS SHOW SOME EFFECT OF SOLID 0026
DISSOLUTION ON OXIDATION RATE OF SLURRIES OF PH 4.5 0026
ORDIS CODES..: NECN-001528 SSIE-GMA 4127 1 EPA -R805227-02 TASK-F624A-046
ORD -RF10830-3078 MAND-30-99 AP -624A
DU -L110 LABT-EMI

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVE/APPROACH: PERFORM LABORATORY STUDY TO MEASURE THE OXIDATION KINETICS OF SOLUTIONS AND SLURRIES OF CALCIUM SULFITE, USING STIRRED REACTORS AND FLOW REACTORS. THE EFFECTS OF SOLID DISSOLUTION, PH, TEMPERATURE, CONCENTRATION, AND CATALYSTS WILL BE DETERMINED WITHIN THE RANGES EXPERIENCED IN LIME/LIMESTONE FGD SCRUBBERS. FINAL OUTPUT: A MATHEMATICAL MODEL RELATING THE PRINCIPAL PROCESS VARIABLES TO SO2 OXIDATION IN FGD SCRUBBERS WILL BE PUBLISHED AS A FINAL REPORT IN 1979. RESULTS TO DATE: BATCH REACTOR EXPERIMENTS SHOW SOME EFFECT OF SOLID DISSOLUTION ON THE OVERALL OXIDATION RATE OF SLURRIES OF PH 4.5. THE OBSERVED RATES ARE HIGHER THAN THOSE REPORTED BY SOVIET INVESTIGATORS AT SIMILAR CONDITIONS. THIS STUDY SHOWS A SLURRY OXIDATION RATE OF 6 TIMES 10 TO THE MINUS THREE POWER MOL/L. MIN. AT PH 5.3 AND 40 DEGREES C.

**PROJECT: 03328-SOIL AND CROP MANAGEMENT SYSTEMS FOR TREATMENT, UTILIZATION, AND DISPOSAL OF MUNICIPAL WASTE WATER AND SLUDGES
STARTING/ COMPLETION DATE : 06/77 - 01/80 : FUNDING : ESTIMATED - FY78 / $ 138206
TASK CODE=L611C-55 **EPA=R805270-02 ** (GRANT) PRIOR FY77 / $ 133050

EPA OFFICER,: LE LEACH EPA/ERL - ADA
INVESTIGATOR,: AE ERICKSON MICHIGAN STATE UNIV CROP & SOIL SCI DEPT
BG ELLIS MICHIGAN STATE UNIV CROP & SOIL SCI DEPT
LW JACOBS MICHIGAN STATE UNIV CROP & SOIL SCI DEPT
BD KNEZEK MICHIGAN STATE UNIV CROP & SOIL SCI DEPT
JE HOOK MICHIGAN STATE UNIV CROP & SOIL SCI DEPT
MILESTONES...: 02/78 -REPORT: 50% N REMOVAL IN CORN-RYE INTERCROPPING W/O CORN YIELDS LOSS
05/79 -FINAL REPORT - OPTIMUM INTERCROPPING, WEED CONTROL, SLUDGE LOADIN G
PLAN ID.....: (AP-611C)(DU-8106) APPLICATION OF WASTEWATER TO LAND (SOIL TREATMENT SYSTEMS)
FINAL OUTPUT,: REPORTS EVAL. INTERCROPPING OF CORN AND FORAGE CROP 0035
OPTIMUM NITROGEN REMOVAL. 0035
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
CURR. RESULTS: CORN-RYE SYSTEM CAN REDUCE LEACHING LOSSES OF NITRO 0035
TO ALMOST ONE-HALF AND GIVE EQUIV. CORN YIELDS. 0035
ORDIS CODES,.: RECN-003328 SSIE-GMA 4587 1 EPA -R805270-02 TASK-L611C-55
ORD -RL10820-1078 MAND-10-01 AP -611C
DU -8106 LABT-ALN

PROJ STATUS,.: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVES: (1) TO DEVELOP INTERCROPPING MANAGEMENT AND WASTEWATER MANAGEMENT TECHNIQUES WHICH WILL OPTIMIZE THE STRIPPING OF NUTRIENTS FROM WASTEWATER, (2) TO DETERMINE THE FEASIBILITY OF LAND APPLICATION OF SLUDGE TO LAND BEING USED FOR A WASTEWATER TREATMENT SYSTEM. FINAL OUTPUT: REPORT EVALUATING INTERCROPPING OF CORN AND FORAGE CROPS FOR OPTIMUM NITROGEN REMOVAL IN PERCOLATING APPLIED WASTEWATER AND EVALUATION OF FEASIBILITY OF SLUDGE AND ITS LOADING RATES ON WASTEWATER IRRIGATED CROPS. RESULTS TO DATE: PRELIMINARY RESULTS INDICATE THAT CORN-RYE SYSTEM CAN REDUCE LEACHING LOSSES OF NITROGEN TO ALMOST ONE-HALF AND GIVE EQUIVALENT CORN YIELDS.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REPORT: ORDCONV (VERSION V2.0) * OFFICE OF RESEARCH AND DEVELOPMENT *
LIST OF PROJECTS FROM MATCHED GRANT SYSTEM INPUT
RUN DATE: 06/29/79 * O R D I S D A T A E X T R A C T * PAGE- 143

**PROJECT: 01832-LONG-RANGE TRANSPORT AND TRANSFORMATION OF SULFUR DIOXIDE AND SULFATE

STARTING/ COMPLETION DATE : 05/77 - 05/79 : FUNDING : ESTIMATED - FY78 / $ 60000
TASK CODE=G603A-AD-17 **EPA=R805271-02 ** (GRANT) PRIOR FY77 / $ 40000

EPA OFFICER.: G HOLZWORTH EPA/ESRL - RTP
INVESTIGATOR.: ER REITER COLORADO STATE UNIV AGRIC ENG DEPT
T HENMI COLORADO STATE UNIV AGRIC ENG DEPT
MILESTONES...: 05/79 -FINAL REPORT
PLAN ID.....: (AP-603A)(DU-A125) ATMOSPHERIC PROCESSES AND EFFECTS
MANDATE.....: 10-99 & SULFATES 0034
ORDIS CODES..: RECN-001832 SSIE-GMA 3861 1 EPA -R805271-02 TASK-G603A-AD-17
ORD -RG10830-1078 LABN-G603A-AE-09 MAND-10-99
AP -603A DU -A125 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVES: TO DEVELOP A MODEL OF LONG-RANGE TRANSPORT AND TRANSFORMATION OF SULFUR DIOXIDE AND SULFATE, AND TO CALCULATE CONCENTRATION DISTRIBUTIONS OF THESE POLLUTANTS. APPROACH: USING OBSERVED DATA OF WIND, AND CONCENTRATION DISTRIBUTIONS OF SULFUR DIOXIDE AND SULFATE, COMPARISONS BETWEEN THE CALCULATED CONCENTRATIONS AND THE OBSERVED CONCENTRATIONS WILL BE MADE. BASED UPON THESE COMPARISONS, REFINEMENTS OF VARIOUS PARAMETERS IN THE MODEL WILL BE CARRIED OUT. THE PARAMETERS TO BE REFINED INCLUDE DEPOSITION VELOCITY AND TRANSFORMATION RATE. CURRENT PLANS AND PROGRESS: THE COMPUTER PROGRAM IS, AT PRESENT, CAPABLE OF CALCULATING THE CONCENTRATIONS OF POLLUTANTS ALONG TRAJECTORIES AS WELL AS THE AVERAGE CONCENTRATIONS OVER GRIDDED REGIONS. THE PROGRAM CONSISTS OF TWO MAJOR ROUTINES: 1) A ROUTINE THAT CALCULATES TRAJECTORIES OF PLUME INCREMENTS OVER THE REGIONAL SCALE AREA AND DISPERSION PARAMETERS ALONG TRAJECTORY SEGMENTS USING OBSERVED WIND DATA OVER THE REGION, AND 2) A ROUTINE THAT CALCULATES THE CONCENTRATIONS ALONG TRAJECTORIES AND INTERPOLATES THE PLUME CONCENTRATIONS TO GRID INTERSECTIONS. IMPROVEMENT WILL BE MADE SO THAT THE PROGRAM CAN CALCULATE THE AVERAGE CONCENTRATIONS OVER LONGER TIME PERIODS WITH GREATER NUMBERS OF SOURCE AREAS. FURTHER IMPROVEMENT WILL BE MADE TO INCLUDE THE VERTICAL TRANSPORT OF POLLUTANTS FROM THE TOP OF THE MIXED LAYER.

**PROJECT: 03238-MOVEMENT AND FATE OF VIRUSES AND ORGANIC POLLUTANTS IN GROUND WATER DURING THE LAND TREATMENT OF WASTE WATER
STARTING/ COMPLETION DATE : 07/77 - 07/80 : FUNDING : ESTIMATED - FY78 / $ 161815
TASK CODE=L6098-10 **EPA=R805292-02 ** (GRANT) PRIOR FY77 / $ 149557

EPA OFFICER.: WJ DUNLAP EPA/ERL - ADA
INVESTIGATOR.: CP GERBA BAYLOR COLLEGE OF MEDICINE
MILESTONES...: 07/78 -REPORT PRELIMINARY FINDINGS
07/79 -REPORT PRELIMINARY FINDINGS
07/80 -FINAL REPORT
PLAN ID.....: (AP=6098)(DU=8106) PLAN 6098 0032
MANDATE.....: 20-99 OR COLL. OF MED., HOUSTON, TX 0032
CURR. RESULTS: NITROGEN DRIVEN, SUBMERSIBLE PUMP BUILT FOR ORG. SA 0032
OF DEEP GROUND WATERS
ORDIS CODES..: RECN-003238 SSIE-ZZ 268 EPA -R805292-02 TASK-L6098-10
ORD -RL10C30-2078 LABN-L614C-010 MAND-20-99
AP -6098 DU -8106 LABT-ALM

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE PURPOSE OF THIS PROJECT IS TO INVESTIGATE THE MOVEMENT OF VIRAL PATHOGENS AND ORGANIC POLLUTANTS FROM WASTEWATER INTO GROUND WATER DURING THE LAND APPLICATION OF WASTEWATER IN ORDER TO DEVELOP INFORMATION REQUIRED TO CONFIRM OR ADJUST EXISTING DESIGN AND OPERATION CRITERIA TO ASSURE THE PROTECTION OF GROUND WATER ASSOCIATED WITH SOIL TREATMENT FACILITIES. SPECIFIC OBJECTIVES INCLUDE: (1) THE IDENTIFICATION AND QUANTIFICATION OF ORGANIC POLLUTANTS IN GROUND WATER UNDERLYING SELECTED LAND APPLICATION SITES; (2) DETERMINATION OF THE EXTENT OF SLOW CHROMATOGRAPHIC MOVEMENT OF ORGANIC POLLUTANTS AND VIRUSES THROUGH SOIL INTO GROUND WATER USING COLUMN STUDIES; (3) DETERMINATION OF THE MECHANISMS OF VIRUS REMOVAL DURING PASSAGE OF WASTEWATER THROUGH SOIL USING BATCH AND COLUMN STUDIES AND A VARIETY OF VIRUSES AND SOILS; (4) DETERMINATION OF THE SURVIVAL OF VIRUSES IN SOIL UNDER A VARIETY OF ENVIRONMENTAL CONDITIONS; AND (5) EVALUATION OF THE USE OF ENTEROVIRUS-LIKE BACTERIOPHAGES AS INDICATORS OF ANIMAL VIRUS BEHAVIOR IN GROUND WATER. CURRENT VIRUS STUDIES HAVE BEEN CONCERNED WITH STUDYING VIRAL ABSORPTION OF SOIL. METHODS HAVE BEEN DEVELOPED AND TESTED FOR THE RECOVERY OF ENTEROVIRUSES FROM SOIL SLUDGE AND SOIL MIXTURES. OVER TWENTY ENTEROVIRUS TYPES HAVE BEEN TESTED FOR THEIR ABILITY TO ABSORB TO SANDY LOAM SOIL. ORGANIC STUDIES HAVE DEALT WITH INSTALLATION AND TESTING OF ANALYTICAL EQUIPMENT AND PREPARATION OF FIELD SAMPLING EQUIPMENT. A NITROGEN DRIVEN, SUBMERSIBLE PUMP HAS BEEN BUILT FOR ORGANIC SAMPLING OF DEEP GROUND WATERS.

**PROJECT: 00760-REACTION OF ACTIVATED CARBON WITH AQUEOUS CHLORINE AND OTHER DISINFECTION AGENTS

STARTING/ COMPLETION DATE : 07/77 - 07/80 : FUNDING : ESTIMATED - FY78 / $ 131195
TASK CODE=C614 -7174 **EPA=R805293-02 ** (GRANT) PRIOR FY77 / $ 56435

EPA OFFICER,: AA STEVENS EPA/MERL - CINC
INVESTIGATOR,: VL SNOEYINK UNIV OF ILLINOIS SCH OF ENG/CIV ENG DEPT
WH PIRKLE UNIV OF ILLINOIS SCH OF ENG/CIV ENG DEPT
JJ MCCREARY UNIV OF ILLINOIS SCH OF ENG/CIV ENG DEPT
W MCHIE UNIV OF ILLINOIS SCH OF ENG/CIV ENG DEPT
MILESTONES...: 06/78 -INTERIM REPORT
06/79 -INTERIM REPORT
09/80 -FINAL REPORT PUBLISHED
PLAN ID.....: (AP-614)(DU-C110) PUBLIC SECTOR ACTIVITIES- WATER SUPPLY
MANDATE.....: 10-13 SOLID WASTE DISPOSAL ACT
ORDIS CODES..: RECN-000760 SSIE-ZZ 383 EPA -R805293-02 TASK-C614 -7174
ORD -RC10C30-1078 LABN-C614A-080 MAND-10-13
AP -614 DU -C110 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: ACTIVATED CARBON IS A STRONG REDUCING AGENT AND WHEN IT IS USED IN TREATMENT OF WATER SUPPLIES IT READILY REACTS WITH THE PREDISINFECTANT CHLORINE. DURING THE FIRST YEAR OF THE STUDY, JULY 20, 1977-JULY 19, 1978, IT WAS SHOWN THAT MANY CHLORINATED ORGANIC COMPOUNDS ARE FORMED WHEN CHLORINE REACTS WITH ACTIVATED CARBON, BOTH CARBON WHICH HAS NO PREADSORBED ORGANICS AND CARBON WHICH HAS HAD MATERIALS ADSORBED ONTO ITS SURFACE. THE PROPOSED RESEARCH WILL SHOW THE QUANTITIES OF CHLORINATED ORGANICS AND THE SPECIES WHICH ARE FORMED UNDER VARIOUS CHLORINATION CONDITIONS. COLUMN AND BATCH REACTORS WILL BE USED, AND CHLORINE CONCENTRATIONS AND THE CARBON DOSES WILL BE SELECTED TO SIMULATE THOSE OF IMPORTANCE IN POTABLE WATER TREATMENT. IN PARTICULAR, EMPHASIS WILL BE PLACED UPON THOSE COMPOUNDS WHICH CAN BE DETERMINED BY THE PURGE AND TRAP ANALYTICAL PROCEDURE, THOSE WHICH CAN BE EXTRACTED FROM WATER AND ANALYZED BY CAPILLARY COLUMN-GAS CHROMATOGRAPHY, AND THOSE HIGH MOLECULAR WEIGHT MATERIALS WHICH ARE NOT CHROMATOGRAPHABLE WITHOUT CHANGING THEIR CHARACTERISTICS. IN CONJUNCTION WITH THE WORK ON CHLORINE, SIMILAR STUDIES ARE ANTICIPATED USING CHLORINE DIOXIDE AND OZ

C614

**PROJECT: 01187-A STUDY OF CANCER AND THE PUBLIC DRINKING WATER SUPPLIES IN MISSOURI

STARTING/ COMPLETION DATE : 06/77 - 07/81 : FUNDING : ESTIMATED - FY78 / $ 203000
TASK CODE=D6148-067 **EPA=R805297-02 ** (GRANT) PRIOR FY77 / $ 155000

EPA OFFICER,: L MCCABE EPA/MERL - CINC
INVESTIGATOR,: CJ MARIENFELD UNIV OF MISSOURI SCH OF MED
MILESTONES...: 07/78 -CANCER RATES BY WATER SUPPLY SERVICE AREA
07/79 -BIOASSAY RESULTS ON SELECTED WATER SUPPLIES
PLAN ID.....: (AP-6148)(DU-C110) WATER SUPPLY - HEALTH EFFECTS RESEARCH
MANDATE.....: 10-13 SOLID WASTE DISPOSAL ACT
30-99 EMIOLOGY 0006
ORDIS CODES..: RECN-001187 SSIE-GMA 4367 1 EPA -R805297-02 TASK-D6148-067
ORD -RD10B30-5078 LABN-D6148-032 MAND-10-13
MAND-30-99 AP -6148 DU -C110 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: ESTABLISHMENT AND MAINTENANCE OF A STATEWIDE SURVEILLANCE SYSTEM FOR HUMAN CANCER INCIDENCE IN RELATIONSHIP TO THE MULTIPLE SOUCES OF COMMUNITY PUBLIC WATER SUPPLIES IN MISSOURI AND THE METHODS OF TREATMENT OF SUCH LOCAL WATER SUPPLIES. USING THE AVAILABLE MORTALITY AND MORBIDITY DATA, A COMPUTERIZED RURAL ROUTE GEUCODING SYSTEM WILL BE USED TO LOCATE THE RESIDENCE OF THE AFFECTED INDIVIDUALS IDENTIFIED AS A PART OF THE POPULATION AT RISK WITHIN THE GEOGRAPHIC WATER SUPPLIED ARE

**PROJECT: 02200-ION CHROMATOGRAPHY OF AROMATIC AMINES

STARTING/ COMPLETION DATE : 07/77 - 11/80 : FUNDING : ESTIMATED - FY78 / $ 20000
TASK CODE=G7128-8E-06 **EPA=R805298-01 ** (GRANT) PRIOR FY77 / $ 47000

EPA OFFICER,: JD MULIK EPA/ESRL - RTP
INVESTIGATOR,: JD FROHLIGER UNIV OF PITTSBURGH GRAD SCH OF PUBLIC HLTH
MILESTONES...: 08/78 -METHODOLOGY DEVELOPED
11/80 -ORD REPORT ON METHOD FOR ANALYSIS OF AROMATIC AMINES
PLAN ID.....: (AP-7128)(DU-A130) CHAR. AND MEASUREMENT METHODS DEVELOPMENT (AIR)
FINAL OUTPUT,: METHOD FOR ANALYSIS OF AROMATIC AMINES. 0045
MANDATE.....: 10-02 CLEAN AIR ACT
CURR. RESULTS: TENTATIVE ION CHROMATOGRAPHIC PROCEDURE DEVELOPED A 0045
PLANS MADE TO TEST OR EVALUATE METHOD. 0045
ORDIS CODES..: RECN=002200 SSIE-GMA 3772 1 EPA -R805298-01 TASK-G7128-8E-06
ORD -RG10830-1078 LABN-G-078-R807 MAND-10-02
AP -7128 DU -A130 LABT-ALM

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVE: THE OBJECTIVE OF THIS RESEARCH PROJECT IS TO DEVELOP A LIQUID CHROMATOGRAPHIC METHOD FOR THE SEPARATION AND ANALYSIS OF AMINES FOUND IN ENVIRONMENTAL SAMPLES. THE LIQUID CHROMATOGRAPHIC METHOD TO BE UTILIZED IS A MODIFICATION OF ION CHROMATOGRAPHY AS DESCRIBED BY SMALL (1). THE AMINES TO BE EXAMINED ARE AROMATIC AMINES, MANY WHICH ARE KNOWN OR SUSPECTED CARCINOGENS. THE ENVIRONMENTAL SAMPLES TO BE UTILIZED WILL BE OBTAINED ON HI-VOLUME FILTERS. THESE FILTERS WILL BE COLLECTED IN THE VICINITY OF SOURCES OF AMINES SUCH AS COKE WORKS AND DYE MANUFACTURING FACILITIES. EMISSIONS FROM THESE TYPES OF SOURCES HAVE BEEN IMPLICATED IN LUNG AND BLADDER CANCERS. FINAL OUTPUT: METHOD FOR THE ANALYSIS OF AROMATIC AMINES. RESULTS TO DATE: A TENTATIVE ION CHROMATOGRAPHIC PROCEDURE HAS BEEN DEVELOPED AND PLANS ARE BEING MADE TO TEST OR EVALUATE THE METHOD NEAR COKE WORKS AND DYE FACILITIES.

**PROJECT: 02669-PHYSIOLOGICAL EFFECTS OF PESTICIDES ON NEONATES

STARTING/ COMPLETION DATE : 06/78 - 06/80 : FUNDING : ESTIMATED - FY78 / $ 29000
TASK CODE=H615F-8625 **EPA=R805301 ** (GRANT) PRIOR FY /

EPA OFFICER,: N CHERNOFF EPA/HERL - RTP
INVESTIGATOR,: CT GRABOWSKI UNIV OF MIAMI SCH OF ARTS & SCI
MILESTONES,..: 01/78 -ESTABLISH BASELINE VALUES FOR FETAL ECG'S
03/78 -DETERMINE EFFECTS OF PRENATAL MIREX ON ECG'S
04/78 -DETERMINE EFFECTS OF PRENATAL TRYPAN BLUE ON ECG'S
06/78 -INITIATE EXPERIMENTS ON EFFECTS OF VASOPRESSIN ON ECG'S
08/78 -INITIATE EXPERIMENTS ON EFFECTS OF CHLORDINEFORM ON ECG'S
PLAN ID.....: (AP-615F)(DU-E105) MULTI-ROUTE EXPOSURES: HEALTH IMPLICATIONS OF PESTICIDES (SUBSTITUTE CHEMICALS)
FINAL OUTPUT,: PUBLICATION IN OPEN LITERATURE 0011
MANDATE.....: 30-99 TOLOGY 0011
CURR, RESULTS: ALTERACTIONS OF FETAL ECG'S WERE CORRELATED WITH DE 0011
OF FETAL TOXICITY INCLUDING LITTER MORTALITY AND ED 0011
AFTER TREATMENT WITH MIREX. 0011
ORDIS CODES..: RECN-002669 SSIE-GMA 5348 EPA -R805301 TASK-H615F-8625
ORD -RH10830-3078 MAND-30-99 AP -615F
DU -E105 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVE IS TO EVALUATE DEVELOPMENT TOXICITY OF PESTICIDES. EVALUATE EFFECTS OF PESTICIDES ON FETAL CARDIAC PHYSIOLOGY. DEVELOP FETAL CARDIAC PHYSIOLOGY AS DIAGNOSTIC TOOL. DETERMINE RELATIONSHIP OF ECG BLOOD CHEMISTRY AND TERATA. THE FINAL OUTPUT WILL BE A PUBLICATION IN THE OPEN LITERATURE. ALTERACTIONS OF FETAL ECG'S WERE CORRELATED WITH DEGREE OF FETAL TOXICITY INCLUDING LITTER MORTALITY AND EDEMA AFTER TREATMENT WITH MIREX.

**PROJECT: 03477-POTENTIAL IMPACT OF ACIDIFIED PRECIPITATION ON ELEMENT CYCLING AND PRODUCTION IN SOUTHERN APPALACHIAN DECIDUOUS FORESTS
STARTING/ COMPLETION DATE : 05/78 - 04/79 : FUNDING : ESTIMATED - FY78 / $ 30000
TASK CODE=M602A-209 **EPA=R805305-01 ** (GRANT) PRIOR FY /

EPA OFFICER,: D WEBER EPA/ERL - CORVALLIS
INVESTIGATOR,: B HAINES UNIV OF GEORGIA GRADUATE SCH
MILESTONES,..: 04/79 -FINAL REPORT
PLAN ID.....: (AP-602A)(DU-A105) AIR POLLUTANT EFFECTS UPON TERRESTRIAL ECOSYSTEMS
MANDATE.....: 10-02 CLEAN AIR ACT
ORDIS CODES..: RECN-003477 SSIE-ZZ 272 EPA -R805305-01 TASK-M602A-209
ORD -RM10C30-1078 MAND-10-02 AP -602A
DU -A105 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVES OF THIS PROJECT ARE TO DETERMINE THE EFFECTS OF SIMULATED ACID RAIN ON NUTRIENT CYCLING AND THE PRODUCTIVITY OF SELECTED DECIDUOUS FOREST SPECIES. EXPERIMENTAL WORK INVOLVING THE EFFECTS OF SIMULATED ACIDIC RAIN ON ROOTS, LEAVES AND SOILS FORM THE BASIS FOR THE MODELING EFFORT. SIX SPECIES OF TREES ARE INVOLVED.

**PROJECT: 03272-EFFECTIVENESS AND COST OF ACTIVATED CARBON ADSORPTION OF TOXIC COMPOUNDS FROM PETROLEUM REFINERY WASTEWATERS
STARTING/ COMPLETION DATE : 08/77 - 01/79 : FUNDING : ESTIMATED - FY78 / $ 21927
TASK CODE=L610C-20 **EPA=R805307-01 ** (GRANT) PRIOR FY77 / $ 64673

EPA OFFICER,: JE MATTHEWS EPA/ERL - ADA
INVESTIGATOR,: SL BURKS OKLAHOMA STATE UNIV RESERVOIR RES CTR
MILESTONES,..: 01/79 -FINAL REPORT
PLAN ID.....: (AP=610C)(DU=B118) MATERIALS PRODUCTION, INDUSTRIAL PT. SOURCES (WATER)
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
CURR. RESULTS: ISOTHERM AND COLUMN BREAKTHROUGH STUDIES NEARING CO 0032
CONTINUOUS FLOW BIOASSAYS IN PROGRESS; PILOT SCALE 0032
AQUACULTURE SYSTEM BEING SET UP. 0032
ORDIS CODES..: RECN=003272 SSIE-ZZ 271 EPA -R805307-01 TASK-L610C-20
ORD -RL10C30-1078 LABN-L610C-019 MAND=10-01
AP -610C DU -B118 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: A STUDY WILL BE CONDUCTED TO DETERMINE THE ADSORPTION CAPACITY OF ACTIVATED CARBON FOR 10 SPECIFIC TOXIC ORGANIC COMPOUNDS IDENTIFIED IN PETROLEUM REFINERY WASTEWATERS. ADSORPTION ISOTHERMS AND COLUMN BREAKTHROUGH DATA ON THE SPECIFIC TOXIC COMPOUNDS WILL BE UTILIZED TO PREDICT THE EFFECTIVENESS OF CARBON ADSORPTION TREATMENT AND THE PROJECTED COST OF A FULL SCALE TREATMENT PLANT. IN ADDITION, FATHEAD MINNOW AND BENTHIC MACROINVERTEBRATE CONTINUOUS-FLOW BIOASSAYS OF CARBON TREATED PETROLEUM REFINERY WASTEWATERS WILL BE PERFORMED TO DETERMINE THE CAPABILITY OF CARBON TREATMENT TO PRODUCE A "ZERO-TOXIC POLLUTANT" DISCHARGE. THE AQUACULTURE TREATMENT MODE WILL BE OBSERVED ON A PILOT SCALE TO DETERMINE ITS EFFECTIVENESS IN BIOLOGICALLY REMOVING TOXIC SUBSTANCES FROM PETROLEUM REFINERY EFFLUENTS. ISOTHERM AND COLUMN BREAKTHROUGH STUDIES FOR THE 10 COMPOUNDS ARE NEARING COMPLETION. THE CONTINUOUS FLOW BIOASSAYS ARE IN PROGRESS. THE PILOT SCALE AQUACULTURE TREATMENT SYSTEM IS PRESENTLY BEING SET UP.

**PROJECT: 01132-IDENTIFICATION AND PREVALENCE OF YERSINIA ENTEROCOLITICA IN WASHINGTON STATE WATER SUPPLIES

STARTING/ COMPLETION DATE : 06/77 - 06/80 : FUNDING : ESTIMATED - FY78 / $ 58000
TASK CODE=D6148-027 **EPA=R805313-02 ** (GRANT) PRIOR FY77 / $ 41500

EPA OFFICER.: N JAKUBOWSKI EPA/HERL - CINC
INVESTIGATOR.: TF METZLER UNIV OF WASHINGTON SCH OF PUBLIC HLTH & COMM MED
MILESTONES...: 06/78 -ANNUAL REPORT
06/79 -ANNUAL REPORT
06/80 -FINAL REPORT
PLAN ID.....: (AP-6148)(DU-C110) WATER SUPPLY - HEALTH EFFECTS RESEARCH
MANDATE.....: 10-13 SOLID WASTE DISPOSAL ACT
ORDIS CODES..: HECN-001132 SSIE-GMA 4351 1 EPA -R805313-02 TASK-D6148-027
ORD -RD10830-1078 LABN-D6148-013 MAND-10-13
AP -6148 DU -C110 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVES OF THE CONTINUATION OF EPA GRANT R 805313 ARE DERIVED FROM RESEARCH GOALS ALREADY ACHIEVED IN PART, AND THOSE ASPECTS WHICH ARE BEING DONE OR LEFT TO DO. YERSINIA ENTEROCOLITICA IS BEING ISOLATED FROM PRE-TREATED AND CHLORINATED POTABLE WATERS, AND THE ISOLATES NOW NUMBER 45 FROM APPROXIMATELY 600 WATER SAMPLES. THE ISOLATES ARE BEING FULLY CHARACTERIZED BIOCHEMICALLY AND WILL SOON BE READY FOR SEROLOGICAL AND VIRULENCE ANALYSIS--TO BE ACCOMPLISHED IN YEARS TWO AND THREE OF THIS STUDY. SINCE WE HAVE APPROXIMATELY 800 WATER SAMPLES YET TO ANALYZE OR COLLECT, WE ANTICIPATE A FULL COLLECTION OF APPROXIMATELY 125 STRAINS OF THE ENTERIC BACTERIUM IN QUESTION. IN ADDITION TO COMPLETING THE ISOLATION AND CHARACTERIZATION OF ALL STRAINS OF YER, ENTEROCOLITICUM FROM THE CONTRACTED WATER SUPPLIES, OUR GREATEST PREOCCUPATION WILL BE CENTERED AROUND THE PRODUCTION OF IMMUNIZING ANTIGENS, THE IMMUNIZATION OF RABBITS WITH HEAT-STABLE CELL WALL FRACTIONS OR KILLED YERSINIAL CELLS; AND THE ENSUING SEROLOGICAL MAPPING OF FIT TO EXISTING 34 SEROTYPES RECOGNIZED IN EUROPE. ALL SMOOTH CELL PREPARATIONS WHICH DO NOT SEROTYPE TO THE PRESENT STANDARDS WILL BE UTILIZED IN THE PRODUCTION OF ANTISERA. LATER CROSS-ADSORPTION STUDIES WILL BE UNDERTAKEN TO ESTABLISH THE NEW SEROTYPES WHICH WILL HAVE TO BE ADDED TO THE PRESENT SYSTEM. WE CANNOT HAZARD ANY GUESSES AS TO HOW MANY NEW SEROTYPES THERE WILL BE. BIOCHEMICAL REACTIONS WILL AT LEAST SUGGEST, OR REINFORCE, MODERN RESEARCH IN NOMENCLATURE VIA DNA HOMOLOGY RESULTS OF BRENNER--ALTHOUGH SUCH LATTER METHODS ARE BEYOND THE SCOPE OF THIS RESEARCH. LASTLY, WE SHALL BE IN VIRULENCE TITRATIONS IN MICE BY THE METHODS OF QUAN DURING THIS SECOND YEAR AND COMPLETE THEM WITHIN THE THIRD YEAR. ADDITIONAL OR SUBSTITUTE SYSTEMS FOR VIRULENCE TITRATION MAY BE SUGGESTED THAT ARE MORE GERMAINE TO EPA NEEDS OR USES. WE ARE PREPARED TO ACCOMMODATE SUCH REQUIREMENTS.

**PROJECT: 03697-INPUTS OF HAZARDOUS MATERIALS FROM THE ATMOSPHERE TO SAGINAW BAY

STARTING/ COMPLETION DATE : 07/77 - 09/79 : FUNDING : ESTIMATED - FY78 / $ 55000
TASK CODE=N608A-030 **EPA=R805325-01 ** (GRANT) PRIOR FY77 / $ 41200
EPA OFFICER,: MD MULLIN EPA/ERL - DULUTH
INVESTIGATOR,: TJ MURPHY DE PAUL UNIV LIBERAL ARTS & SCI/CHEM DEPT
MILESTONES...: 09/79 -FINAL REPORT
PLAN ID.....: (AP-608A)(DU-8115) FRESHWATER ECOLOGICAL PROCESSESS & EFFECTS
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-003697 SSIE-ZZ 247 EPA -R805325-01 TASK-N608A-030
ORD -RN10C30-1078 LABN-N769 -030 MAND-10-01
AP -608A DU -8115 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVES OF THIS PROJECT ARE TO DETERMINE THE ATMOSPHERIC INPUTS OF POLYCHLOROBIPHENYLS (PCBS) AND POLYCYCLIC AROMATIC HYDROCARBONS (PAHS) TO SAGINAW BAY, IN LAKE HURON. PRECIPITATION AND DRY DEPOSITION SAMPLES WILL BE COLLECTED AT SEVERAL LOCATIONS AROUND THE BAY. THESE SAMPLES WILL BE ANALYZED FOR AROCLOR 1242, 1254 AND 1260, FOR THE MAJOR PAHS PRESENT AND FOR THE PAHS KNOWN TO BE CARCINOGENS.

**PROJECT: 02247-INVESTIGATE INTERFERENCES IN OPTICAL INFRARED MEASUREMENT TECHNIQUES

STARTING/ COMPLETION DATE : 01/77 - 01/80 : FUNDING : ESTIMATED - FY78 / $ 15000
TASK CODE=G7128-BE-45 **EPA=R805332-01 ** (GRANT) PRIOR FY77 / $ 40000
EPA OFFICER,: WA MCCLENNY EPA/ESRL - RTP
INVESTIGATOR,: RR PATTY UNIV OF NORTH CAROLINA SCH OF MATHS & PHYS SCI
MILESTONES...: 09/79 -REPORT ON OPTO-ACOUSTIC DETECTION OF PARTICULATE MATTER
PLAN ID.....: (AP-7128)(DU-A130) CHAR. AND MEASUREMENT METHODS DEVELOPMENT (AIR)
MANDATE.....: 10-02 CLEAN AIR ACT
ORDIS CODES..: RECN-002247 SSIE-GMA 3788 1 EPA -R805332-01 TASK-G7128-BE-45
ORD -RG10B30-1078 LABN-G7128-BB-40 MAND-10-02
AP -7128 DU -A130 LABT-ALM

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVES: TO SPONSOR THE DEVELOPMENT OF A RESEARCH EFFORT DIRECTED AT THE IDENTIFICATION AND QUANTIFICATION OF GASEOUS AND PARTICULATE ABSORBERS IN THE INFRARED, PARTICULARLY IN THE SPECTRAL REGION NEAR 9 MICRONS.APPROACH: TO FUND A GRANT EFFORT IN WHICH THE OPTICAL TECHNIQUE OF OPTO-ACOUSTIC DETECTION IS USED TO MEASURE ABSORPTION COEFFICIENTS OF GASEOUS AND PARTICULATE ABSORBERS IN THE INFRARED AND TO QUANTIFY AMBIENT CONCENTRATIONS OF THESE ABSORBERS. THE APPROACH IS SUFFICIENTLY NEW SO THAT SEVERAL FEASIBILITY EXPERIMENTS WILL BE TRIED INITIALLY IN ORDER TO DETERMINE THE MOST EFFECTIVE RESEARCH PLAN. CURRENT PLANS/PROGRESS: CURRENT PLANS INCLUDE: (1) INITIATE EXPERIMENTS TO DETERMINE FEASIBILITY (TO BEGIN IN THE SUMMER OF 1977); (2) FINALIZATION OF FIRST YEAR RESEARCH OBJECTIVES AS BASED ON INITIAL FEASIBILTY STUDIES (IN THE FALL OF 1977). PROGRESS DURING THE IMMEDIATE PAST HAS CONSISTED OF THE PROCESSING OF A GRANT PROPOSAL.

**PROJECT: 00336-COAL AND THE ENVIRONMENT ABSTRACT SERIES

STARTING/ COMPLETION DATE : 03/77 - 12/79 : FUNDING : ESTIMATED - FY78 / $ 30000
TASK CODE=B6238-320 **EPA=R805336-02 ** (GRANT) PRIOR FY77 / $ 33000

EPA OFFICER,: RD HILL EPA/IERL - CINC
INVESTIGATOR,: VE GLEASON BITUMINOUS COAL RES INC
JF BOYER BITUMINOUS COAL RES INC
MILESTONES...: 10/79 -FINAL COMPILATION OF COAL AND THE ENVIRONMENT SERIES
PLAN ID.....: (AP-6238)(DU-N105) ENERGY RESOURCE EXTRACTION AND HANDLING, SOLID FOSSIL FUELS
MANDATE.....: 10-99 -NUCLEAR ENERGY) PL 93-577 0008
CURR. RESULTS: WORK IN UPDATING BIBLIOGRAPHIES IN PROGRESS, 0008
ORDIS CODES..: RECN-000336 SSIE-ZZ 620 EPA -R805336-02 TASK-B6238-320
ORD -RB10C30-1078 MAND-10-99 AP -6238
DU -N105 LABT-EMI

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE GENERAL OBJECTIVE OF THIS PROJECT IS TO CONTINUE MAKING THE LITERATURE ON THE CONTROL OF ENVIRONMENTAL PROBLEMS RELATED TO COAL MINING WELL KNOWN AND EASILY ACCESSIBLE. THESE ENVIRONMENTAL PROBLEMS INCLUDE COAL MINE DRAINAGE, DISPOSAL OF REFUSE GENERATED BY COAL MINES AND BY COAL CLEANING PLANTS, AND RECLAMATION OF AREAS AFFECTED BY SURFACE MINING. THIS OBJECTIVE WILL BE ACHIEVED BY CONTINUING THE PUBLICATION OF SEQUENTIAL BIBLIOGRAPHIES IN THE "COAL AND THE ENVIRONMENT ABSTRACT SERIES." THESE BIBLIOGRAPHIES ARE PRIMARILY BASED ON THE ENVIRONMENTAL LITERATURE COLLECTIONS AT BITUMINOUS COAL RESEARCH, INC. BUT ALSO INCLUDE ALL OTHER KNOWN REFERENCES. UNDER THE CURRENT GRANT THE THIRD BIBLIOGRAPHY IN THE SERIES, "DISPOSAL OF REFUSE FROM COAL MINES AND COAL CLEANING PLANTS," WAS PUBLISHED IN MAY 1978. "RECLAMATION OF SURFACE-MINED LAND," IS IN PROGRESS AND WILL BE COMPLETED LATE IN 1978. WORK IN UPDATING THE "RECLAMATION OF SURFACE-MINED LANDS" AND "COAL MINE DRAINAGE" BIBLIOGRAPHIES IS IN PROGRESS. COPIES OF THE RECLAMATION BIBLIOGRAPHY WILL BE AVAILABLE IN LATE 1978 AND THE MINE DRAINAGE BIBLIOGRAPHY IN LATE 1979.

**PROJECT: 02648-DEVELOPMENT OF AN IN VITRO NEUROTOXICITY ASSAY

STARTING/ COMPLETION DATE : 07/77 - 07/80 : FUNDING : ESTIMATED - FY78 / $ 65000
TASK CODE=H615F-7612 **EPA=R805339-02 ** (GRANT) PRIOR FY77 / $ 60000

EPA OFFICER,: RL BARON EPA/HERL - RTP
INVESTIGATOR,: RJ RICHARDSON UNIV OF MICHIGAN SCH OF PUB HLTH
ML BARTH UNIV OF MICHIGAN SCH OF PUB HLTH
MILESTONES...: 12/78 -DEVELOP NEUROTOXIC ASSAY
06/78 -ISOLATE NEUROTOXIC ESTERASE
12/78 -IMMOBILIZE NEUROTOXIC ESTERASE
09/78 -CHARACTERIZE NEUROTOXIC ESTERASE
06/80 -DEFINE PHYSIOLOGICAL FUNCTION OF ESTERASE
PLAN ID.....: (AP-615F)(DU-E105) MULTI-ROUTE EXPOSURES: HEALTH IMPLICATIONS OF PESTICIDES (SUBSTITUTE CHEMICALS)
MANDATE.....: 10-06 FEDERAL INSECTICIDE, FUNGICIDE AND RODENTICIDE AC
20-30 AA FOR TOXIC SUBSTANCES
ORDIS CODES..: RECN-002648 SSIE-ZZ 467 EPA -R805339-02 TASK-H615F-7612
ORD -RH10C30-5078 LABN-H615A-8612 MAND-10-06
MAND-20-30 AP -615F DU -E105 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: A MEMBRANE-BOUND PROTEIN, NEUROTOXIC ESTERASE (NTE), FROM NERVOUS TISSUE OF THE HEN HAS BEEN SHOWN TO BE A MOLECULAR TARGET FOR NEUROTOXIC ORGANOPHOSPHOROUS COMPOUNDS. NTE CAN BE ASSAYED BY A DIFFERENTIAL PROCEDURE WHICH REMOVES ACTIVITY DUE TO IRRELEVANT ESTERASES. THE ASSAY CAN BE USED TO PREDICT THE NEUROTOXIC POTENTIAL OF ORGANOPHOSPHOROUS COMPOUNDS. A COMPLETELY IN VITRO ASSAY SYSTEM BASED ON THIS ENZYME IS BEING DEVELOPED. NTE IS BEING IDENTIFIED IN VARIOUS NEURAL AND NON-NEURAL TISSUES AND ATTEMPTS ARE BEING MADE TO ISOLATE, PURIFY, AND IMMOBILIZE THE ENZYME FOR USE IN A ENZYME REACTOR.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
* OFFICE OF RESEARCH AND DEVELOPMENT *
LIST OF PROJECTS FROM MATCHED GRANT SYSTEM INPUT
* O R D I S D A T A E X T R A C T *

**PROJECT: 00039-TOTAL ORGANIC CHLORINE (TOCL) ANALYSIS - INSTRUMENTATION FOR DIRECT DETERMINATION IN WATER WITHOUT PRECONCENTRATION
STARTING/ COMPLETION DATE : 06/76 - 03/80 : FUNDING : ESTIMATED - FY78 / $ 37758
TASK CODE=A614 -39 **EPA=R805340-01 ** (GRANT) PRIOR FY /

EPA OFFICER,: JJ LICHTENBERG EPA/EMSL - CINC
INVESTIGATOR,: JG MONTALVO GULF SOUTH RESEARCH INST
L TRUXILLO GULF SOUTH RESEARCH INST
R HAMRO GULF SOUTH RESEARCH INST

MILESTONES...: 11/78 -REPORT ON INITIAL INVEST. AND EVAL. OF ANALYTICAL PARAMETERS
11/79 -REPORT ON FABRICATION OF INSTRUMENTATION
03/80 -FINAL REPORT AND DELIVERY OF PROTOTYPE INSTRUMENT

PLAN ID.....: (AP=614)(OU=C110) PUBLIC SECTOR ACTIVITIES- WATER SUPPLY

MANDATE.....: 10-13 SOLID WASTE DISPOSAL ACT
20-13 UAA FOR DRINKING WATER

CURR. RESULTS: FIRST REPORT DUE OCT. 78 0001
ORDIS CODES..: RECN-000039 SSIE-GMA 5085 EPA -R805340-01 TASK-A614 -39
ORD -RA10R50-5078 MAND-10-13 MAND-20-13
AP -614 OU -C110 LABT-MIS

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH

ABSTRACT.....: THE OBJECTIVE OF THE PROPOSED RESEARCH IS THE DEVELOPMENT OF A SIMPLE, PRACTICAL, AND RELIABLE TECHNIQUE TO ASSAY WATER SAMPLES FOR PARTS PER BILLION (PPB) LEVELS OF TOTAL ORGANIC CHLORINE (TOCl) WITHOUT LENGTHY PRECONCENTRATION STEPS. THE NEED FOR SUCH A PROCEDURE IS EVIDENT IN LIGHT OF THE RECENT DECISION OF THE AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) TO DEFER ACCEPTANCE OF TWO PROPOSED TOCl METHODS, BOTH PROCEDURES INVOLVED RECONCENTRATION BY ABSORPTION ONTO A RESIN OR ACTIVATED CHARCOAL; THE RESULTING RECOVERIES OF ORGANIC CHLORINES WERE INCOMPLETE AND/OR IRREPRODUCIBLE. THE PROCEDURE PROPOSED HERE STEMS FROM PRELIMINARY WORK AT GSRI AND DOES NOT REQUIRE PRECONCENTRATION TREATMENTS. THE METHOD UTILIZES (A) FLASH EVAPORATION TO SEPARATE THE ORGANIC CHLORINE FROM INORGANIC CHLORIDE SALTS, (B) OXIDATION OF ORGANIC CHLORINE VAPORS TO FREE AVAILABLE CHLORINE IN A CATALYTIC COMBUSTION FURNACE, (C) DERIVATIZATION OF THE FREE CHLORINE WITH SYRINGALDAZINE, AND FINALLY (D) FLUOROMETRIC ASSAY OF THE RESULTING FLUORESCENT DERIVATIVE. PRIOR WORK BY GSRI HAS DEMONSTRATED THE FEASIBILITY OF EACH OF THESE STEPS. THE MORE DETAILED STUDIES PROPOSED HERE SHOULD ENSURE THAT OPERATIONAL CONDITIONS FOR EACH PROCEDURE ARE COMBINED EFFECTIVELY IN THE FINAL ANALYTICAL METHOD. 3. CRITICAL EVALUATION OF THE PROPOSED PROCEDURE WITH FIELD SAMPLES IS THE SECOND MAJOR OBJECTIVE OF THIS RESEARCH. THE EPA WILL PROVIDE INDEPENDENTLY ASSAYED SPLIT SAMPLES FOR DIRECT COMPARISON WITH THE GSRI PROCEDURE. ACCURACY, PRECISION, AND SENSITIVITY OF THE GSRI TECHNIQUE WILL BE TESTED BY STATISTICAL ANALYSES.

**PROJECT: 01072-EPIDEMIOLOGICAL-MICROBIOLOGICAL STUDY ON HEALTH EFFECTS AMONG SWIMMERS AT LAKE PONTCHARTRAIN IN NEW ORLEANS

STARTING/ COMPLETION DATE : 07/77 - 09/80 : FUNDING : ESTIMATED - FY78 / $ 77000
TASK CODE=D607C-018 **EPA=R805341-01 ** (GRANT) PRIOR FY77 / $ 60000

EPA OFFICER,: VJ CABELLI EPA/HERL - CINC
INVESTIGATOR,: VK KITSANES TULANE UNIV OF LOUISIANA SCH PUB HLTH/TROP MED
AC ANDERSON TULANE UNIV OF LOUISIANA SCH PUB HLTH/TROP MED
JE DIEM TULANE UNIV OF LOUISIANA SCH PUB HLTH/TROP MED
MILESTONES...: 10/77 -COMPLETE TRIALS
09/79 -COMPLETE ANALYSIS OF DATA AND PREPARE REPORT
09/80 -DETERMINE WHETHER ROTOVIRUSES ARE THE ETIOLOGICAL AGENTS
PLAN ID.....: (AP-607C)(DU-B103) WATER QUALITY HEALTH EFFECTS: CRITERIA FOR RECREATIONAL & SHELLFISH-GROWING WATERS
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
20-64 DAA FOR HEALTH AND ECOLOGICAL EFFECTS
ORDIS CODES,.: NECN-001072 SSIE-GMA 5399 EPA -R805341-01 TASK-D607C-018
ORD -RD10830-5078 MAND-10-01 MAND-20-64
AP -607C DU -B103 LABT-HEE

PROJ STATUS,.: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE PURPOSE OF THIS STUDY IS TO MEASURE THE HEALTH EFFECTS OF SWIMMING IN SUBTROPICAL RECREATIONAL WATERS. IT REPRESENTS ONE APPROACH TO THE DEVELOPMENT OF WATER QUALITY CRITERIA FOR THE RECREATIONAL WATERS AROUND ALL OF THE NATION'S CITIES. SPECIFICALLY, THE OBJECTIVES ARE TO MEASURE THE HEALTH EFFECTS OF SWIMMING UNDER VARIOUS CONDITIONS AND LEVELS OF WATER POLLUTION. A VARIETY OF GASTROINTESTINAL AND RESPIRATORY SYMPTOMS ARE USED AS HEALTH INDICATORS. DAY-TO-DAY VARIATION IN MICROBIAL COUNTS IN LAKE PONTCHARTRAIN PROVIDES THE ENVIRONMENTAL LABORATORY FOR STUDY. DIFFERENCES BETWEEN BEACH-GOERS WHO SWIM AND THOSE WHO DO NOT WILL ALSO BE TESTED. DURING THE SUMMER OF 1977 WEEKEND BEACH-GOERS WHO DO NOT SWIM MIDWEEK WILL BE INTERVIEWED AT THE BEACH CONCERNING THEIR EXPOSURE TO THE WATER. ON THESE DAYS WATER SAMPLES WILL BE TAKEN AND ANALYZED FOR FECAL COLIFORMS, ENTEROCOCCI, KLEBSIELLA, PSEUDOMONAS, AND E. COLI. TELEPHONE CONTACT WITH RESPONDENTS 8-10 DAYS LATER WILL BE MADE FOR REPORTS ON ILLNESS FOLLOWING THE DAY AT THE BEACH. THE ASSOCIATION BETWEEN SWIMMING AND THE DEVELOPMENT OF ILLNESS UNDER THE DIFFERENT POLLUTION LEVELS WILL BE MEASURED BY THE LOG ODDS RATIO, THE DIFFERENCES IN PROPORTIONS AND THE RELATIVE DIFFERENCE.

**PROJECT: 01854-EXPERIMENTAL DETERMINATION OF DRY DEPOSITION RATES

STARTING/ COMPLETION DATE : 06/77 - 08/79 : FUNDING : ESTIMATED - FY78 / $ 40000
TASK CODE=G603A-AF-05 **EPA=R805342-02 ** (GRANT) PRIOR FY77 / $ 50000

EPA OFFICER,: M LONNEMAN EPA/ESRL - RTP
INVESTIGATOR,: E ROBINSON WASHINGTON STATE UNIV SCH OF ENG
H WESTBERG WASHINGTON STATE UNIV SCH OF ENG
P ZIMMERMAN WASHINGTON STATE UNIV SCH OF ENG
MILESTONES...: 04/81 -ORD REPORT
PLAN ID.....: (AP-603A)(DU-A125) ATMOSPHERIC PROCESSES AND EFFECTS
MANDATE.....: 10-02 CLEAN AIR ACT
ORDIS CODES..: RECN-001854 SSIE-GMA 3872 1 EPA -R805342-02 TASK-G603A-AF-05
ORD -RG10H30-1078 LABN-G603A-AE-16 MAND-10-02
AP -603A DU -A125 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE RESEARCH OBJECTIVES OF THIS GRANT CONTINUATION PROPOSAL ARE: 1. THE CONTINUED DETAILED EVALUATION OF FIELD DATA AND THE DEVELOPMENT OF A FILE OF DRY DEPOSITION DATA FOR MODELING APPLICATIONS. 2. THE CARRYING OUT OF FURTHER DRY DEPOSITION FIELD MEASUREMENT PROGRAMS IN THE SUMMER AND EARLY WINTER OF 1978. 3. TO MAKE A NUMBER OF EXPLORATORY MEASUREMENTS OF NATURAL BIOGENIC HYDROCARBON FLUX FROM THE GROUND SURFACE AT THE DRY DEPOSITION EXPERIMENTAL SITES.

**PROJECT: 01905-RURAL OXIDANT STUDIES AND THE ROLE OF NOX IN RURAL OXIDANT FORMATION

STARTING/ COMPLETION DATE : 06/77 - 06/79 : FUNDING : ESTIMATED - FY78 / $ 155000
TASK CODE=G603A-AJ-03 **EPA=R805343-02 ** (GRANT) PRIOR FY77 / $ 90000

EPA OFFICER,: MA LONNEMAN EPA/ESRL - RTP
INVESTIGATOR,: H WESTBERG WASHINGTON STATE UNIV SCH OF ENG
K SEXTON WASHINGTON STATE UNIV SCH OF ENG
P ZIMMERMAN WASHINGTON STATE UNIV SCH OF ENG
M HOLDREN WASHINGTON STATE UNIV SCH OF ENG
E ROBINSON WASHINGTON STATE UNIV SCH OF ENG
MILESTONES...: 01/80 -REPORT OF SUMMER STUDY OF 1978
PLAN ID.....: (AP-603A)(DU-A125) ATMOSPHERIC PROCESSES AND EFFECTS
MANDATE.....: 10-02 CLEAN AIR ACT
ORDIS CODES..: RECN-001905 SSIE-ZZ 523 EPA -R805343-02 TASK-G603A-AJ-03
ORD -RG10C30-1078 LABN-G603A-AH-17 MAND-10-02
AP -603A DU -A125 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVE OF THIS RESEARCH IS TO DETERMINE THE CAUSE OF THE REDUCED VISIBILITY AND HIGH OXIDANT LEVELS OBSERVED IN THE HOUSTON, TEXAS, AREA. SPECIFIC GOALS INCLUDE MONITORING INDIVIDUAL HYDROCARBONS IN THE C2-C10 MOLECULAR RANGE, NOX, AND OZONE IN URBAN AND NON-URBAN AREAS AROUND HOUSTON. THE STUDY WILL INVOLVE BOTH GROUND BASED AND AIRCRAFT MONITORING. A NATURAL EMISSIONS INVENTORY FOR THE AREA WILL ALSO BE CONDUCTED. THE FIELD STUDY IS SCHEDULED FOR SEPTEMBER AND AUG

323 A

**PROJECT: 00373-GEOCHEMISTRY OF CADMIUM AND OTHER SELECTED HEAVY METALS AS RELATED TO COAL STRIP MINING

STARTING/ COMPLETION DATE : 09/77 - 09/79 : FUNDING : ESTIMATED - FY78 / $ 73000
TASK CODE=R6238-633 **EPA=R805353-02 ** (GRANT) PRIOR FY77 / $ 27000

EPA OFFICER.: RC WILMOTH EPA/IERL - CINC
INVESTIGATOR.: W HOOD SOUTHERN ILLINOIS UNIV SCH OF SCI
P ROBINSON SOUTHERN ILLINOIS UNIV SCH OF SCI
MILESTONES...: 12/77 -REVIEW SAMPLING & ANALYSIS PLAN
01/78 -AWARD CONTINUATION
09/79 -FINAL REPORT RECEIVED
PLAN ID.....: (AP-6238)(DU-N105) ENERGY RESOURCE EXTRACTION AND HANDLING, SOLID FOSSIL FUELS
MANDATE.....: 30-99 L ENGINEERING 000M
ORDIS CODES..: REGN-000373 SSIE-ZZ 201 EPA -R805353-02 TASK-R6238-633
ORD -RB10C30-3078 MAND-30-99 AP -6238
DU -N105 LABT-EMI

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THIS INVESTIGATION IS CONCERNED WITH THE POTENTIAL RELEASE OF CADMIUM AND OTHER TOXIC HEAVY ELEMENTS (ARSENIC, ANTIMONY, NICKEL, COBALT, ZINC, AND CHROMIUM) TO SOUTHERN ILLINOIS STREAMS AS A RESULT OF THE STRIP MINING OF COAL. PRELIMINARY DATA INDICATE THAT SIGNIFICANT AMOUNTS OF TOXIC HEAVY ELEMENTS CAN BE LEACHED BY ACID MINE WATER BUT THE FATE OF THESE ELEMENTS AFTER THEY ENTER THE AQUATIC ENVIRONMENT IS NOT KNOWN. HOWEVER, PRELIMINARY INFORMATION INDICATES THAT DANGEROUS CONCENTRATIONS OF THESE ELEMENTS MAY POSSIBLY BE TRANSPORTED DOWNSTREAM AS PART OF THE BEDLOAD, PERHAPS TO BE AGAIN RELEASED WHEN FAVORABLE CONDITIONS ARISE. OUR STUDY SITE WILL BE A SIX-COUNTY AREA IN SOUTHERN ILLINOIS, ONE OF THE MOST EXTENSIVELY STRIP-MINED AREAS IN THE WORLD. OUR PROPOSED STUDY WILL BE DIVIDED INTO THREE SEPARATE PARTS: (1) REGIONAL AND STRATIGRAPHIC DISTRIBUTION OF THE ELEMENTS IN MINE OVERBURDEN MATERIALS, (2) LEACHING STUDIES ON THE REMOVAL OF THE ELEMENTS FROM OVERBURDEN ROCKS AND (3) DISTRIBUTION OF THE ELEMENTS IN SELECTED STREAMS AND STREAM SEDIMENTS IN THE AREA. OUR RESULTS WILL ESTABLISH THE EXTENT OF CADMIUM AND OTHER HEAVY ELEMENT POLLUTION RESULTING FROM SOUTHERN ILLINOIS COAL STRIP MINING OPERATIONS, ESTABLISH THE CAUSES, AND PROVIDE THE INFORMATION NEEDED FOR ITS PREVENTION.

**PROJECT: 02295-MUCUS GLYCOPROTEINS SECRETED BY TRACHEAL EXPLANT FROM RATS EXPOSED TO POLLUTANTS

STARTING/ COMPLETION DATE : 10/77 - 09/79 : FUNDING : ESTIMATED - FY78 / $ 0
TASK CODE=H6018-7124 **EPA=R805355 ** (GRANT) PRIOR FY77 / $ 36197

EPA OFFICER,: P HU EPA/HERL - RTP
INVESTIGATOR,: JA LAST UNIV OF CALIFORNIA CALIFORNIA PRIMATE RES CTR
MILESTONES,..: 12/77 -OPTIMIZE AND REFINE ASSAY TECHNIQUE
03/78 -COMPLETE 3-DAY 0.5 PPM O3-1MG/CU M H2SO4 EXPOSURE
06/78 -COMPLETE 90-DAY O3-H2SO4 AND 20 MG/CU M CHROMATE
09/78 -COMPLETE 180-DAY O3-H2S 04 AND 60 MG/CU M CHROMATE
03/79 -CHRONIC EXPOSURE TO 0.5 PPM O3-10 MICROGRAM/CU M H2SO4
08/79 -COMPLETE DOSE RESPONSE STUDY TO O3-H2SO4 MIXTURES
09/79 -FINAL EVALUATION OF PROPOSED STUDIES
PLAN ID.....: (AP-6018)(DU-A105) TRANSPORTATION AIR POLLUTANTS EXPOSURE AND EFFECTS
MANDATE.....: 20-62 DAA FOR ENERGY ,MINERALS, AND INDUSTRY
CURR. RESULTS: TECHNIQUES DEV. TO SEPARATE NEUTRAL AND ACIDIC MUCU 0000
GLYCOPROTEINS FROM TRACHEAL EXPLANT MEDIUM. 0000
ORDIS CODES..: RECN-002295 SSIE-ZZ 643 EPA -R805355 TASK-H6018-7124
ORD -RH10C30-2078 LABN-H6018-8124 MAND-20-62
AP -6018 DU -A105 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVES/APPROACH: THE EFFECTS OF EXPOSURE OF RATS TO OZONE AND SULFURIC ACID AEROSOLS, POLLUTANTS GASES THAT CAUSE IRRITATION TO THE AIRWAYS, ARE BEING EVALUATED. PRELIMINARY DATA SUGGEST THAT THERE ARE QUALITATIVE AND QUANTITATIVE CHANGES IN GLYCOPROTEINS SECRETED BY CULTURED TRACHEA FROM ANIMALS EXPOSED TO OZONE OR TO MIXTURES OF OZONE AND SULFURIC ACID. TO PERFORM AN EXPERIMENT, WE INCUBATE EXCISED TRACHEA IN ORGAN CULTURE IN THE PRESENCE OF ISOTOPICALLY LABELED PRECURSOR SUGARS OR AMINO ACIDS. THE RADIOACTIVE LABEL ALLOWS US TO QUANTITATE SECRETED GLYCOPROTEINS, AND RELATE THOSE QUANTITATIVE DATA TO THE POLLUTANT REGIMEN TO WHICH RATS HAD BEEN EXPOSED. FINAL OUTPUT: IT IS ANTICIPATED THAT THESE STUDIES WILL ADD TO OUR BASIC KNOWLEDGE CONCERNING REACTIONS OF THE RESPIRATORY SYSTEM WITH AIR POLLUTANTS, AND OF TRACHEAL METABOLISM, WITH A FOCUS ON THE MOST IMPORTANT SECRETORY PRODUCTS OF THIS ORGAN, THE MUCUS GLYCOPROTEINS. SUCH KNOWLEDGE IS RELEVANT TO A BETTER UNDERSTANDING OF SEVERAL HUMAN DISEASE, INCLUDING CHRONIC BRONCHITIS, AND TO A RATIONAL EVALUATION OF THE ROLE(S), IF ANY, THAT EXPOSURE TO AIR POLLUTANTS PLAY(S) IN THE DEVELOPMENT OF THESE DISEASES OF THE CONDUCITNG AIRWAYS. RESULTS TO DATE: EXPERIMENTS ARE PROCEEDING WITH RESEARCH OBJECTIVES IN ACCORD WITH THE MILESTONES AND ARE ON SCHEDULE. TECHNIQUES HAVE BEEN DEVELOPED TO SEPARATE NEUTRAL AND ACIDIC MUCUS GLYCOPROTEINS FROM TRACHEAL EXPLANT MEDIUM. DATA OBTAINED SUGGEST THAT EXPOSURE IN VIVO TO O3-H2SO4 CAUSES AN INCREASE IN THE RELATIVE AMOUNT OF ACIDIC GLYCOPROTEIN SECRETED BY RAT TRACHEAL EXPLANTS.

**PROJECT: 02294-MUCUS GLYCOPROTEINS SECRETED BY TRACHEAL EXPLANTS FROM RATS EXPOSED TO POLLUTANTS

STARTING/ COMPLETION DATE : 11/77 - 10/80 : FUNDING : ESTIMATED - FY78 / $ 36000
TASK CODE=R6018-7124 **EPA=R805355 ** (GRANT) PRIOR FY76 /

EPA OFFICER,: JA GRAHAM EPA/HERL - RTP
INVESTIGATOR,: JA LAST UNIV OF CALIFORNIA CALIFORNIA PRIMATE RES CTR
MILESTONES...: 11/77 -AWARD GRANT
01/78 -BEGIN EXPOSURES
04/79 -COMPLETE INITIAL IN VIVO EXPOSURES TO O3 AND H2SO4
08/80 -COMPLETE EXPOSURES TO COMBINATIONS OF O3 AND H2SO4
10/80 -FINAL REPORT
PLAN ID.....: (AP-6018)(OU-A105) TRANSPORTATION AIR POLLUTANTS EXPOSURE AND EFFECTS
MANDATE.....: 20-62 DAA FOR ENERGY ,MINERALS, AND INDUSTRY
CURR. RESULTS: TECHNIQUES DEV. TO SEPARATE NEUTRAL AND ACIDIC MUCU 0000
GLYCOPROTEINS FROM TRACHEAL EXPLANT MEDIUM. 0000
ORDIS CODES..: RECN-002294 SSIE-GMA 4327 EPA -R805355 TASK-R6018-7124
ORD -RH10C30-2078 LABN-R6018-8124 MAND-20-62
AP -6018 OU -A105 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE EFFECTS OF EXPOSURE OF RATS OF OZONE AND SULFURIC ACID AEROSOLS, POLLUTANT GASES THAT CAUSE IRRITATION TO THE AIRWAYS, ARE BEING EVALUATED. PRELIMINARY DATA SUGGEST THAT THERE ARE QUALITATIVE AND QUANTITATIVE CHANGES IN GLYCOPROTEINS SECRETED BY CULTURED TRACHEA FROM ANIMALS EXPOSED TO OZONE OR TO MIXTURES OF OZONE AND SULFURIC ACID. INTERESTINGLY, SULFURIC ACID AND OZONE APPEAR TO ACT SYNERGISTICALLY. TO PERFORM AN EXPERIMENT, WE INCUBATE EXCISED TRACHEA IN ORGAN CULTURE IN THE PRESENCE OF ISOTOPICALLY LABELED PRECURSOR SUGARS OR AMINO ACIDS. THE RADIOACTIVE LABEL ALLOWS US TO QUANTITATE SECRETED GLYCOPROTEINS, AND RELATE THOSE QUANTITATIVE DATA TO THE POLLUTANT REGIMEN TO WHICH THE RATS HAD BEEN EXPOSED. IT IS ANTICIPATED THAT THESE STUDIES WILL ADD TO OUR BASIC KNOWLEDGE CONCERNING REACTIONS OF THE RESPIRATORY SYSTEM WITH AIR POLLUTANTS, AND OF TRACHEAL METABOLISM, WITH A FOCUS ON THE MOST IMPORTANT SECRETORY PRODUCTS OF THIS ORGAN, THE MUCUS GLYCOPROTEINS. SUCH KNOWLEDGE IS RELEVANT TO A BETTER UNDERSTANDING OF SEVERAL HUMAN DISEASES, INCLUDING CHRONIC BRONCHITIS, AND TO A RATIONAL EVALUATION OF THE ROLE(S), IF ANY, THAT EXPOSURE TO AIR POLLUTANTS PLAY(S) IN THE DEVELOPMENT OF THESE DISEASES OF THE CONDUCTING AIRWAYS.

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**PROJECT: 00375-PREDICTING RESPONSE TO A NATURAL SYSTEM TO URANIUM EXTRACTION - OAKVILLE AQUIFER, TEXAS

STARTING/ COMPLETION DATE : 09/77 - 08/79 : FUNDING : ESTIMATED - FY78 / $ 132000
TASK CODE=B6238-638 **EPA=R805357-02 ** (GRANT) PRIOR FY77 / $ 105000

EPA OFFICER.: SJ HUBBARD EPA/IERL - CINC
INVESTIGATOR.: AE GALLOWAY UNIV OF TEXAS BUR OF ECONOMIC GEOLOGY
CD HENRY UNIV OF TEXAS BUR OF ECONOMIC GEOLOGY
CW KREITLER UNIV OF TEXAS BUR OF ECONOMIC GEOLOGY
MILESTONES...: 09/79 -FINAL REPORT ON RESPONSE OF NATURAL SYSTEM TO URANIUM EXTRACTION
PLAN ID.....: (AP-6238)(DU-N105) ENERGY RESOURCE EXTRACTION AND HANDLING, SOLID FOSSIL FUELS
MANDATE.....: 10-99 -NUCLEAR ENERGY) PL 93-577 0008
ORDIS CODES..: RECN-000375 SSIE-ZZ 423 EPA -R805357-02 TASK-B6238-638
ORD -RB10C30-1078 MAND-10-99 AP -6238
DU -N105 LABT-EMI

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE PRINCIPAL OBJECTIVE OF THIS PROJECT IS TO DETERMINE AND DOCUMENT FOR ONE URANIUM-BEARING AQUIFER SYSTEM THE INTERRELATIONSHIPS BETWEEN AQUIFER GEOMETRY, HYDROLOGY, HYDROCHEMISTRY, MINERALOGY, AND URANIUM MINERALIZATION AND TO DETERMINE HOW THIS NATURAL SYSTEM WILL RESPOND TO LOCAL CHEMICAL OR PHYSICAL STRESSES INDUCED BY URANIUM MINING. THE IMPLICATION OF PROJECT RESULTS FOR THE DESIGN OF MONITORING SYSTEMS WILL BE EVALUATED.

**PROJECT: 03927-MARINE PROTOZOAN MICROSOMAL ACTIVATION OF OIL POLLUTANTS TO MUTAGENS

3925

STARTING/ COMPLETION DATE : 09/77 - 08/79 : FUNDING : ESTIMATED - FY78 / $ 50000
TASK CODE=Q787 -08 **EPA=R805364-02 ** (GRANT) PRIOR FY77 / $ 25000

EPA OFFICER.: NL RICHARDS EPA/ERL -GULF BREEZE
INVESTIGATOR.: DG LINDMARK ROCKEFELLER UNIV BIOCHEM CYTOLOGY LAB
MILESTONES...: 12/78 -EVALUATION OF PROTOZA MICROSOMES
12/79 -EVALUATION OF ALGAL MICROSOMES
PLAN ID.....: (AP-787)(DU-) * NO TEXT FOUND **
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
20-62 DAA FOR ENERGY ,MINERALS, AND INDUSTRY
30-99 CHEMISTRY 0014
ORDIS CODES..: RECN-003927 SSIE-GMA 5497 EPA -R805364-02 TASK-Q787 -08
ORD -RU10830-5078 MAND-10-01 MAND-20-62
MAND-30-99 AP -787 LABT-MEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE PROJECT CONSISTS OF THE ISOLATION AND CHARACTERIZATION OF MICROSOMES FROM VARIOUS MARINE PROTOZOA. WORK WILL BE DONE ON A SMALL SCALE UNDER LABORATORY CONDITIONS. THE RESEARCH WILL BE DONE IN COLLABORATION WITH DR. JOSEF SCHMIDT-COLLERUS AT THE DENVER RESEARCH INSTITUTE (GRANT # R805671) WHO WILL STUDY BIPHENYL HYDROXYLASE ACTIVITY. THE SECOND PHASE OF THE PROJECT WILL CONSIST OF PARALLEL STUDIES ON THE MICROSOMES OF MARINE ALGAE. THE PURPOSE OF THE RESEARCH IS TO PREDICT THE FATE OF SELECTED COMPOUNDS WITH MUTAGENIC AND PRE-MUTAGENIC ACTIVITIES.

**PROJECT: 03850-WATER QUALITY AND EUTROPHICATION STUDIES IN SANTA ROSA SOUND IN THE PROXIMITY OF ESCAMBIA AND SANTA ROSA COUNTIES, FLORIDA

STARTING/ COMPLETION DATE : 09/77 - 09/79 : FUNDING : ESTIMATED - FY78 / $ 22500
TASK CODE=Q608C-1-02 **EPA=R805366-02 ** (GRANT) PRIOR FY77 / $ 50800

EPA OFFICER.: G WALSH EPA/ERL -GULF BREEZE
INVESTIGATOR.: GA MUSHIRI UNIV OF WEST FLORIDA GRADUATE SCH
MILESTONES...: 00/78 -REPORT
PLAN ID.....: (AP-608C)(DU-8115) MARINE & ESTUARINE ECOLOGICAL PROCESSESS & EFFECTS (IBA 608)
ORDIS CODES..: RECN-003850 SSIE-GMA 4125 1 EPA -R805366-02 TASK-Q608C-1-02
AP -608C DU -8115 LABT- EE
PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY- UNKN
ABSTRACT.....: THE PROPOSED PROJECT IS INTENDED TO MONITOR WATER QUALITY PARAMETERS OVER A PERIOD OF TWO YEARS THAT WILL GIVE DETAILED INFORMATION CONCERNING THE PRESENT WATER QUALITY STATUS OF SANTA ROSA SOUND, ESCAMBIA-SANTA ROSA COUNTIES, FLORIDA. FROM BI-WEEKLY FIELD SAMPLES, WATER QUALITY PARAMETERS WILL BE MEASURED AGAINST A BACKGROUND OF PHYSICO-CHEMICAL DATA. THESE PARAMETERS INCLUDE B.O.D., INORGANIC AND ORGANIC CARBON, ALGAL CELL COUNTS AND TYPES, AND BACTERIAL NUMBERS AND SIZES. THE MAJOR TYPES OF PHOSPHATE AND NITROGENOUS SPECIES WILL BE DETERMINED AND CORRELATED WITH ALGAL POPULATION COMPOSITION AND PRIMARY PRODUCTION RATES (TO BE MEASURED IN SITU BY THE 14C TECHNIQUE). THE EFFECTS OF NITROGEN-PHOSPHORUS ENRICHMENT ON ALGAL PRODUCTIVITY WILL BE DETERMINED BY EMPLOYING THE PRIMARY PRODUCTIVITY MEASUREMENT TECHNIQUE ON IN SITU CULTURES ON A SEASONAL BASIS. IN ADDITION TO THE REGULAR SAMPLING REGIMEN, DIAL STUDIES WILL BE CONDUCTED TO DELINEATE DAILY TRENDS IN WATER QUALITY PARAMETERS. PILOT INVESTIGATIONS WILL BE CONDUCTED PERIODICALLY TO INDICATE AREAS NEEDING FURTHER INVESTIGATION. IT IS ANTICIPATED THAT THE INFORMATION OBTAINED FROM THE PROPOSED STUDY WILL AID IN THE ESTABLISHMENT OF RECOMMENDATIONS FOR THE IMPROVEMENT OF WATER QUALITY IN SANTA ROSA SOUND.

**PROJECT: 03591-USE OF LICHENS AS INDICATORS AND PREDICTORS OF AIR POLLUTION

STARTING/ COMPLETION DATE : 09/77 - 08/80 : FUNDING : ESTIMATED - FY78 / $ 14000
TASK CODE=M625A-020 **EPA=R805367-02 ** (GRANT) PRIOR FY77 / $ 13604

EPA OFFICER.: EM PRESTON EPA/ERL - CORVALLIS
INVESTIGATOR.: S EVERSMAN MONTANA STATE UNIV SCH OF LETTERS & SCI
MILESTONES...: 08/80 -FINAL REPORT
PLAN ID.....: (AP-625A)(DU-N140) EFFECTS OF ENERGY-RELATED POLL. ON ORGANISMS & ECOSYSTEMS
0043
MANDATE.....: 10-99 GY REORGANIZATION ACT
ORDIS CODES..: RECN-003591 SSIE-ZZ 284 EPA -R805367-02 TASK-M625A-020
ORD -RM10C30-1078 MAND-10-99 AP -625A
DU -N140 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVES OF THIS PROJECT ARE 1) TO DETERMINE THE EFFECTS OF LOW-LEVEL SO2 STRESS ON LICHEN HEALTH AND CONDITION; AND 2) TO CHARACTERIZE LICHEN COMMUNITIES IN THE COLSTRIP AREA. OBSERVATIONS OF EFFECTS OF LOW-LEVEL SO2 STRESS ON PHOTOSYNTHETIC RATES OF USNEA HIRTA AND PARMELIA CHLOROCHROA WILL BE MADE AT THE ZONAL AIR POLLUTION SYSTEMS ON CUSTER NATIONAL FOREST. OBSERVATIONS ON LICHEN COMMUNITIES IN THE COLSTRIP VICINITY WILL INCLUDE 1) DETERMINATION OF ANATOMICAL CONDITION AND SULFUR CONTENT FOR COMPARISON WITH BASELINE DATA, AND 2) CHARACTERIZATION OF SPECIES COMPOSITION OF LICHEN COMMUNITIES ON THE SOIL AND ON PONDEROSA PINE TRUNKS IN THE COLSTRIP AREA FOR COMPARISON WITH BASELINE DATA.

**PROJECT: 03593-INVESTIGATION OF THE EFFECTS OF COAL-FIRED POWER PLANT EMISSIONS ON
TISSUE STRUCTURE OF SELECTED BIRD SPECIES - BIRDS AS INDICAT
STARTING/ COMPLETION DATE : 07/77 - 07/80 : FUNDING : ESTIMATED - FY78 / $ 27000
TASK CODE=M625A-021 **EPA=R805370-02 ** (GRANT) PRIOR FY77 / $ 27154

EPA OFFICER,: E PRESTON EPA/ERL - CORVALLIS
INVESTIGATOR,: MD KERN COLLEGE OF WOOSTER GRADUATE SCH
MILESTONES...: 07/80 -FINAL REPORT
PLAN ID.....: (AP-625A)(DU-N140) EFFECTS OF ENERGY-RELATED POLL. ON ORGANISMS & ECOSYSTEMS 0043
FINAL OUTPUT,: REPORT TO DEV. CAPACITY TO PREDICT ECOL. IMPACT OF 0043
PLANT EMISSIONS BEFORE DAMAGE.
MANDATE.....: 10-99 GY REORG. ACT. 0043
ORDIS CODES..: RECN-003593 SSIE-GMA 4235 1 EPA -R805370-02 TASK-M625A-021
ORD -RM10830-1078 MAND-10-99 AP -625A
DU -N140 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVE: IDENTIFICATION OF GRASSLAND BIRD SPECIES WHICH ARE SENSITIVE TO THE EMISSIONS OF COAL-FIRED POWER PLANTS AND CAN BE USED TO MONITOR AND INDICATE AIR QUALITY. FINAL OUTPUT: REPORT THAT HELPS DEVELOP THE CAPACITY TO PREDICT THE ECOLOGICAL IMPACTS OF COAL-FIRED POWER PLANT EMISSIONS BEFORE DAMAGE OCCURS.

**PROJECT: 01923-AMBIENT HYDROCARBON AND OZONE MEASUREMENTS NEAR A REFINERY
STARTING/ COMPLETION DATE : 08/78 - 08/81 : FUNDING : ESTIMATED - FY78 / $ 60000
TASK CODE=G625B-EA-01 **EPA=R805376-02 ** (GRANT) PRIOR FY /

EPA OFFICER,: JJ BUFALINI EPA/ESRL - RTP
INVESTIGATOR,: HH WESTBERG WASHINGTON STATE UNIV SCH OF ENG
K SEXTON WASHINGTON STATE UNIV SCH OF ENG
MILESTONES...: 12/81 -FINAL ORD REPORT
PLAN ID.....: (AP-625B)(DU-N140) TRANSPORT AND FATE OF ENERGY-RELATED POLL. IN ECOSYSTEMS 0037
MANDATE.....: 10-99 OX,REGULATION
ORDIS CODES..: RECN-001923 SSIE-ZZ 159 EPA -R805376-02 TASK-G625B-EA-01
ORD -RG10C30-1078 LABN-G603A-AD-16 MAND-10-99
AP -625B DU -N140 LABT-ALN

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THIS RESEARCH PROGRAM IS AIMED AT DETERMINING UNDER WHAT CONDITIONS OZONE LEVELS EXCEEDING AMBIENT BACKGROUND CONCENTRATIONS ARE FORMED IN FOSSIL FUEL POWER PLANT PLUMES. GROUND AND AMBIENT MONITORING OPERATIONS WILL FOCUS ON CHARACTERIZING GASEOUS CONSTITUENTS IN THE PLUME, MONITORING CHANGES IN PLUME CHEMISTRY DURING DOWNWIND TRANSPORT, AND ESTABLISHING THE CONTRIBUTION OF POWER PLANT EMISSIONS TO DOWNWIND OZONE BUILDUP. FIELD OPERATIONS WILL BE CONDUCTED FOR 15 DAYS IN THE KENOSHA, WISCONSIN AREA DURING AUGUST AND SEPTEMBER, 1978.

**PROJECT: 03595-MONITORING PLANT COMMUNITY CHANGES DUE TO FOSSIL FUEL POWER PLANTS IN EASTERN MONTANA

STARTING/ COMPLETION DATE : 07/77 - 07/80 : FUNDING : ESTIMATED - FY78 / $ 41309
TASK CODE=M625A-023 **EPA=R805391-02 ** (GRANT) PRIOR FY77 / $ 52766

EPA OFFICER,: E PRESTON — EPA/ERL - CORVALLIS
INVESTIGATOR,: JE TAYLOR — MONTANA STATE UNIV — SCH OF AGRIC
MILESTONES...: 07/80 -FINAL REPORT
PLAN ID.....: (AP=625A)(DU=N140) EFFECTS OF ENERGY-RELATED POLL. ON ORGANISMS & ECOSYSTEMS — 0043
FINAL OUTPUT.: REPORT TO OEV. CAPACITY TO PREDICT ECOL. IMPACT OF COAL-FIRED PLANT EMISSIONS BEFORE DAMAGE. — 0043
MANDATE.....: 10-99 GY REORG. ACT — 0043
ORDIS CODES..: RECN-003595 — SSIE-GMA 4242 : — EPA -R805391-02 — TASK-M625A-023
ORD -RM10B30-1078 — MAND-10-99 — AP -625A
DU -N140 — LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE — DATA-ORIGINAL — CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVE: TO CONTINUE TO MONITOR AIR POLLUTION EFFECTS UPON NATIVE GRASSLANDS VEGETATION IN AREAS AFFECTED BY FOSSIL FUEL POWER PLANTS AND ON AREAS ARTIFICIALLY STRESSED WITH AIR POLLUTION; SUPPLY BASELINE INVENTORY INFORMATION, INCLUDING AERIAL PHOTOGRAPHY AND ITS INTERPRETATION, TO A VARIETY OF SCIENTISTS, LAND USERS, AND MANAGERS IN SOUTHEASTERN MONTANA; AND PROVIDE RIGOROUS DATA FOR SIMULATION MODELS WHICH CAN BE USED TO PREDICT BIOENVIRONMENTAL CHANGES DUE TO FOSSIL FUEL POWER GENERATION IN OTHER AREAS. FINAL OUTPUT: REPORT THAT HELPS DEVELOP THE CAPACITY TO PREDICT THE ECOLOGICAL IMPACTS OF COAL-FIRED POWER PLANT EMISSIONS BEFORE DAMAGE OCCURS.

**PROJECT: 00795-CHEMICAL CONTROL OF WATER QUALITY IN DISTRIBUTION SYSTEMS

STARTING/ COMPLETION DATE : 09/77 - 09/79 : FUNDING : ESTIMATED - FY78 / $ 81541
TASK CODE=C614A-085 **EPA=R805400-02 ** (GRANT) PRIOR FY77 / $ 55602

EPA OFFICER,: MC GANDELS — EPA/MERL - CINC
INVESTIGATOR,: JE SINGLEY — STATE UNIV SYS OF FLORIDA — ENV ENG DEPT
MILESTONES...: 10/78 -INTERIM REPORT
10/79 -INTERIM REPORT
01/81 -FINAL REPORT: PARAMETERS FOR EVAL. AND INDICES
PLAN ID.....: (AP=614A)(DU=C110) WATER SUPPLY - WATER TREATMENT & SYSTEMS
MANDATE.....: 10-13 SOLID WASTE DISPOSAL ACT
CURR. RESULTS: LAB AND FIELD STUDIES UNDERWAY TO EVAL. PARAMETERS. — 0017
ORDIS CODES..: RECN-000795 — SSIE-ZZ 387 — EPA -R805400-02 — TASK-C614A-085
ORD -RC10C30-1078 — MAND-10-13 — AP -614A
DU -C110 — LABT-ALM

PROJ STATUS..: PROJECT-ACTIVE — DATA-ORIGINAL — CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVES: TO DEVELOP APPROPRIATE CHEMICAL CONTROL MEASURES TO PREVENT CORROSION OF DISTRIBUTION SYSTEMS AND HOUSEHOLD PIPING BY POTABLE WATER, AND TO PREVENT THE DEGRADATION IN THE QUALITY OF THE WATER ITSELF. APPROACH: TO DETERMINE THE EFFECT OF WATER QUALITY PARAMETERS, SUCH AS PH, EH, DO AND IONIC COMPOSITION ON PRECIPITATION OF CACO3 AND ON THE CORROSION RATE OF VARIOUS METALS. CURRENT PLANS AND PROGRESS: LABORATORY AND FIELD STUDIES ARE UNDERWAY TO EVALUATE THE ABOVE PARAMETERS.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
* OFFICE OF RESEARCH AND DEVELOPMENT *
LIST OF PROJECTS FROM MATCHED GRANT SYSTEM INPUT
* O R D I S D A T A E X T R A C T *

**PROJECT: 03322-SOIL FILTRATION OF SEWAGE EFFLUENT OF A RURAL AREA

STARTING/ COMPLETION DATE : 08/77 - 12/80 : FUNDING : ESTIMATED - FY78 / $ 40418
TASK CODE=L611C-51 **EPA=R805401-02 ** (GRANT) PRIOR FY77 / $ 39802

EPA OFFICER,: LE LEACH EPA/ERL - ADA
INVESTIGATOR,: BR SABEY COLORADO STATE UNIV SCH OF AGRIC SCI
NA EVANS COLORADO STATE UNIV SCH OF AGRIC SCI
MILESTONES...: 03/78 -ANN. REPORT: 7.5 CM/WK OF EFFLUENT - NO HAZARD TO CROPS/GROUNDWA TEN
03/78 -INT. REPORT: WINTER OPERATION SUCCESSFUL UNDER ICECAP RIDGE/FURR ORS
PLAN ID.....: (AP=611C)(DU=8106) APPLICATION OF WASTEWATER TO LAND (SOIL TREATMENT SYSTEMS)
FINAL OUTPUT,: REPORT DETAILING EVAL OF SUMMER SPRAY IRRIGATION LO 0035
RATE AND DOSING FREQ. AND OPTIMUM WINTER RIDGE AND 0035
FLOOD IRRIGATION TECHNIQUE. 0035
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT 0035
CURR. RESULTS: RATES OF 7.5 CM/WK AS FEASABLE FOR BOTH SUMMER & WI TASK-L611C-51
ORDIS CODES..: RECN-003322 SSIE-GMA 3856 1 EPA -R805401-02
ORD -RL10A50-1078 LABN-L611C-46 MAND-10-01
AP -611C DU -8106 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVES: THE WORK PLAN IS PRESENTED IN TWO PARTS: (1) A CONTINUATION STUDY OF IRRIGATION OF MOUNTAIN MEADOWS WITH LAGOON-STORED MUNICIPAL SEWAGE EFFLUENT DURING SUMMERS. THE SUMMER PHASE WAS BEGUN IN 1976 (OTHER FEDERAL FUNDS) WITH THE PRIME OBJECTIVE OF DETERMINING SEWAGE LOADING RATE, OPTIMUM FREQUENCY OF LOADING AND DRYING CYCLES, AND SOIL TREATMENT EFFICIENCY. (2) A STUDY TO DETERMINE THE FEASIBILITY OF WINTER OPERATION OF A SOIL TREATMENT INFILTRATION SYSTEM WHERE WASTEWATER IS INJECTED BENEATH ICE CAPPED RIDGE AND FURROW PLOTS. FINAL OUTPUT: THE FINAL OUTPUT WILL BE A REPORT DETAILING THE EVALUATION OF THE SUMMER SPRAY IRRIGATION LOADING RATE AND DOSING FREQUENCY AND THE OPTIMUM WINTER RIDGE AND FURROW FLOOD IRRIGATION TECHNIQUE. RESULTS TO DATE: RESULTS TO DATE INDICATE RATES OF 7.5 CM/WK AS FEASIBLE FOR BOTH SUMMER AND WINTER OPERATION.

3229

**PROJECT: 03597-ENDOCRINOLOGIC AND REPRODUCTIVE STATES OF BIRD POPULATIONS UNDER ENVIRONMENTAL STRESS
STARTING/ COMPLETION DATE : 09/77 - 08/79 : FUNDING : ESTIMATED - FY78 / $ 27400
TASK CODE=M625A-024 **EPA=R805409-02 ** (GRANT) PRIOR FY77 / $ 29031
EPA OFFICER,: EM PRESTON EPA/ERL - CORVALLIS
INVESTIGATOR,: OS FARMER UNIV OF WASHINGTON ZOOL DEPT
MILESTONES...: 08/79 -FINAL REPORT
PLAN ID.....: (AP-625A)(OU-N140) EFFECTS OF ENERGY-RELATED POLL. ON ORGANISMS & ECOSYSTEMS
MANDATE.....: 10-99 GY REORG. ACT 0043
ORDIS CODES..: RECN-003597 SSIE-ZZ 285 EPA -R805409-02 TASK-M625A-024
ORD -RM10C30-1078 MAND-10-99 AP -625A
OU -N140 LABT-MEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVE: THIS PROJECT INVESTIGATION WILL ATTEMPT TO DEVELOP A GENERALIZABLE ASSAY OF ENDOCRINE REACTION TO ENVIRONMENTALLY INDUCED STRESS IN BIRDS. THE RESEARCH WILL 1) PROVIDE BASIC INFORMATION ON THE DIET AND SEASONAL CYCLE OF CORTICOSTERONE; 2) DETERMINE THE EXTENT OF STRESS INDUCED IN BIRDS HELD IN CAPTIVITY AND SUBJECTED TO ROUTINE CAGING, CARE, AND TO EXPERIMENTAL PROCEDURES; 3) PROVIDE INITIAL FIELD TRIALS ON THE USE OF CORTICOSTERONE AS AN INDICATOR OF PHYSIOLOGICAL STRESS CAUSED BY PERTUBATION OF THE ENVIRONMENT. FIELD TRIALS WILL BE MADE ON A BREEDING POPULATION OF WHITE-CROWNED SPARROWS NEAR SEATTLE AND WITH WESTERN MEADOWLARKS IN A GRASSLAND ECOSYSTEM AT COLSTRIP, MONTANA. COMPARISONS IN THE LATTER CASE WILL BE MADE BETWEEN BIRDS WITH TERRITORIES DISTANT FROM THE PLANTS. IN THE FORMER CASE, COMPARISONS WILL BE MADE BETWEEN BIRDS IN NORMAL TERRITORIES AND BIRDS IN PHYSICALLY

**PROJECT: 03455-IMPACT OF OXIDANT AIR POLLUTANTS ON A WESTERN CONIFEROUS FOREST ECOSYSTEM
STARTING/ COMPLETION DATE : 07/77 - 05/80 : FUNDING : ESTIMATED - FY78 / $ 350008
TASK CODE=M602A-025 **EPA=R805410-02 ** (GRANT) PRIOR FY77 / $ 222000
EPA OFFICER,: RG WILHOUR EPA/ERL - CORVALLIS
INVESTIGATOR,: OC TAYLOR UNIV OF CALIFORNIA AIR POLL RES CTR
MILESTONES...: 05/80 -FINAL REPORT
PLAN ID.....: (AP-602A)(OU-A105) AIR POLLUTANT EFFECTS UPON TERRESTRIAL ECOSYSTEMS
FINAL OUTPUT,: REPORT TO HELP SET NATL SECONDARY AIR QUAL. STAND. 0040
MANDATE.....: 10-02 CLEAN AIR ACT
ORDIS CODES..: RECN-003455 SSIE-GMA 4230 1 EPA -R805410-02 TASK-M602A-025
ORD -RM10B30-1078 MAND-10-02 AP -602A
OU -A105 LABT-MEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVE: CONTINUANCE OF GRANT RESEARCH PROGRAM TO DETERMINE THE EFFECT OF LONG TERM EXPOSURE TO AMBIENT OXIDANT AIR POLLUTANTS ON A WESTERN CONIFEROUS FOREST ECOSYSTEM AND TO DEVELOP PREDICITIVE MODELS FOR THE SYSTEM. FINAL OUTPUT: A REPORT WHICH WILL HELP SET NATIONAL SECONDARY AIR QUALITY STANDARDS ADEQUATE TO PROTECT THE ENVIRONMENT.

**PROJECT: 00972-FUNDAMENTAL CONSIDERATIONS IN THE PREPARATION OF REFUSE DERIVED FUELS

STARTING/ COMPLETION DATE : 08/77 - 08/79 : FUNDING : ESTIMATED - FY78 / $ 122000
TASK CODE=C624A-7010 **EPA=R805414-01 ** (GRANT) PRIOR FY77 / $ 130000

EPA OFFICER,: CC WILES EPA/MERL - CINC
INVESTIGATOR,: GJ TREZEK UNIV OF CALIFORNIA SCH OF ENG
G SALVAGE UNIV OF CALIFORNIA SCH OF ENG
MILESTONES...: 08/78 -PRODUCTION OF D-RDF AND BASIC THEORY DEVELOPMENT
12/79 -FINAL REPORT
PLAN ID.....: (AP-624A)(DU-L110) UTILITY AND INDUSTRIAL POWER PRODUCTION
MANDATE.....: 20-14 DAA FOR SOLID WASTE
ORDIS CODES..: RECN-000972 SSIE-GMA 3930 1 EPA -R805414-01 TASK-C624A-7010
ORD -RC10B30-2078 LABN-C618A-7010 MAND-20-14
AP -624A DU -L110 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE GRANTEE HAS DEVELOPED FUNDAMENTAL RELATIONSHIPS INVOLVED IN THE SIZE REDUCTION OF MUNICIPAL SOLID WASTE (MSW). ADDITIONAL RESEARCH HAS BEEN CONDUCTED ON FINE GRINDING OF MSW. THE OBJECTIVE OF THIS RESEARCH IS TO EXPLORE AND DEVELOP THE THEORETICAL RELATIONSHIPS INVOLVED IN THE PRODUCTION OF DENSIFIED FORMS OF REFUSE DERIVED FUELS. THE IMPORTANT DEPENDENT AND INDEPENDENT VARIABLES WHICH WILL FULLY CHARACTERIZE D-RDF FORMATION WILL BE INDENTIFIED. EXPERIMENTS WILL THEN BE PERFORMED TO MEASURE THESE VARIABLES. BASIC RELATIONSHIPS WILL THEN BE DEVELOPED TO HELP DESIGN AND PREDICT THE PERFORMANCE OF A RDF DENSIFICATION PROCESS.

**PROJECT: 00555-WATER QUALITY AND BIOLOGICAL EFFECTS OF URBAN RUNOFF ON COYOTE CREEK

STARTING/ COMPLETION DATE : 11/77 - 04/80 : FUNDING : ESTIMATED - FY78 / $ 60000
TASK CODE=C611A-7110 **EPA=R805418-02 ** (GRANT) PRIOR FY77 / $ 25658

EPA OFFICER,: AN TAFURI EPA/MERL - CINC
INVESTIGATOR,: R PITT WOODWARD & CLYDE CNSLTS
J SARTOR WOODWARD & CLYDE CNSLTS
MILESTONES...: 04/79 -INTERIM REPORT PUBLISHED
10/80 -FINAL REPORT PUBLISHED
PLAN ID.....: (AP-611A)(DU-R106) URBAN RUNOFF POLLUTION CONTROL
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
30-99 RONMENTAL ENGINEERING 0012
ORDIS CODES..: RECN-000555 SSIE-ZZ 407 EPA -R805418-02 TASK-C611A-7110
ORD -RC10C30-5078 LABN-C611A-0011 MAND-10-01
MAND-30-99 AP -611A DU -R106 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVE OF THIS STUDY IS TO QUANTIFY THE BIOLOGICAL AND WATER QUALITY CHANGES OF A SMALL STREAM AS IT PASSES THROUGH THE SAN JOSE, CALIFORNIA URBAN AREA. THE SELECTED STREAM HAS NO INDUSTRIAL OR MUNICIPAL POINT DISCHARGES AND THE EXPECTED STREAM QUALITY GRADIENT WILL BE A FUNCTION ONLY ON NON-POINT URBAN RUNOFF. DETAILED FIELD MEASUREMENTS WILL BE PERIODICALLY CONDUCTED OVER A PERIOD OF ONE YEAR BOTH UPSTREAM OF THE URBAN AREA AND AT SELECTED LOCATIONS WITHIN THE URBAN AREA. ANOTHER TASK OF THE PROJECT IS TO MEASURE THE STORMWATER POLLUTANT REMOVAL EFFECTIVENESS AND WATER QUALITY CHANGES THAT OCCUR WITHIN AN IDEALIZED CATCHBASIN. THIS PROJECT WILL BE CONDUCTED IN CONJUNCTION WITH A CURRENT EPA SPONSORED DEMONSTRATION PROJECT IN SAN JOSE TITLE "DEMONSTRATION OF NON POINT POLLUTANT ABATEMENT THROUGH IMPROVED STREET CLEANING PRACTICES".

**PROJECT: 02196-SYNTHESIS AND PURIFICATION OF POLYNUCLEAR AROMATIC COMPOUNDS

STARTING/ COMPLETION DATE : 05/77 - 05/80 : FUNDING : ESTIMATED - FY78 / $ 40000
TASK CODE=G7128-BE-04 **EPA=R805419 ** (GRANT) PRIOR FY77 / $ 40000

EPA OFFICER.: JE MEEKER EPA/ESRL - RTP
INVESTIGATOR.: EJ EISENBRAUN OKLAHOMA STATE UNIV ARTS & SCI/CHEM DEPT
MILESTONES...: 05/78 -DELIVERY OF COMPOUNDS
05/79 -DELIVERY OF COMPOUNDS
05/80 -DELIVERY OF COMPOUNDS
PLAN ID.....: (AP-7128)(DU-A130) CHAR. AND MEASUREMENT METHODS DEVELOPMENT (AIR)
MANDATE.....: 10-02 CLEAN AIR ACT
10-03 TOXIC SUBSTANCES CONTROL ACT
CURR. RESULTS: 20 COMPOUNDS HAVE BEEN PRODUCED DURING LIFE OF PROJECT. 0045
THESE HAVE BEEN REQUESTED BY NUMBER OF ORGANIZATION 0045
ORDIS CODES..: RECN-002196 SSIE-GMA 3770 1 EPA -R805419 TASK-G7128-BE-04
ORD -RG10B30-1078 LABN-G7128-BB-05 MAND-10-02
MAND-10-03 AP -7128 DU -A130 LABT-ALM

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE SYNTHESIS AND/OR PURIFICATION OF HIGH-PURITY (99.9 PERCENT GOAL) POLYNUCLEAR AROMATIC COMPOUNDS, CHIEFLY HYDROCARBONS FOR POSSIBLE USE AS ANALYTICAL STANDARDS, IS PROPOSED. THESE HYDROCARBONS ARE OF THE TYPES FOUND IN THE PRODUCTS OF INCOMPLETE COMBUSTION (AUTOMOBILE EXHAUST GASES, STACK GASES, COOKING OPERATIONS), STILL BOTTOMS, AND HEAVY FUEL OIL FROM SPILLS, AND HENCE APPEAR AS ENVIRONMENTAL POLLUTANTS. IN GENERAL, KNOWN SYNTHESIS ROUTES WILL BE USED, BUT THEIR IMPROVEMENT WILL BE SOUGHT THROUGH USE OF NEW REAGENTS AND TECHNIQUES. HIGH-PRESSURE LIQUID CHROMATOGRAPHY AND/OR ZONE REFINING WILL BE INCLUDED IN THE PURIFICATION PROCEDURES. MODERN ANALYTICAL TECHNIQUES (GLC, LC, TLC, NMR, MASS, AND OTHER SPECTROMETRIC TECHNIQUES) WILL BE USED FOR IDENTIFYING COMPOUNDS AND ESTABLISHING THE PURITY OF THE SYNTHESIS PRODUCTS. TWENTY COMPOUNDS HAVE BEEN PRODUCED DURING THE LIFE OF THIS PROJECT. THESE COMPOUNDS HAVE BEEN REQUESTED BY A NUMBER OF ORGANIZ

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**PROJECT: 02564-SKELETAL VARIANTS AS TERATOGEN INDICATORS

STARTING/ COMPLETION DATE : 10/77 - 09/80 : FUNDING : ESTIMATED - FY78 / $ 50000
TASK CODE=H615A-7506 **EPA=R805420 ** (GRANT) PRIOR FY /

EPA OFFICER,: N CHERNOFF EPA/HERL - RTP
INVESTIGATOR,: S BECK WHEATON COLLEGE SCH OF LIBERAL ARTS
MILESTONES...: 03/78 -TEST DECAMETHRINE FOR PHOD. OF SKELETAL VARIANTS
06/78 -TEST MANEB FOR PRODUCTION OF SKELETAL VARIANTS
08/78 -INITIATE TESTS ON KNOWN TERATOGENS
PLAN ID.....: (AP=615A)(DU=E105) MULTI-ROUTE EXPOSURES: HEALTH IMPLICATIONS OF PESTICIDES
FINAL OUTPUT,: PUBLICATION IN OPEN LITERATURE. 0008
MANDATE.....: 30-99 TOLOGY 0008
CURR. RESULTS: OF 85 VARIENTS EXAMINED, 53 SHOW COMPOUND-INDUCED V 0008
IN MANEB-TREATED ANIMALS. 0008
ORDIS CODES..: RECN-002564 SSIE-GMA 5166 EPA -R805420 TASK-H615A-7506
ORD -RH10H30-3078 LABN-H629A-8927 MAND-30-99
AP -615A DU -E105 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVES ARE TO EVALUATE SKELETAL VARIANTS INDEX OF FETOTOXICITY AND TO EVALUATE EFFECTS OF PESTICIDES ON FETAL SKELETON. THE FINAL OUTPUT WILL BE A PUBLICATION IN THE OPEN LITERATURE. ALTHOUGH DATA ANALYSIS IS NOT COMPLETE IT APPEARS THAT OF 85 VARIANTS EXAMINED, SOME 53 HAVE SHOWN COMPOUND-INDUCED VARIATION IN MANEB-TREATED ANIMALS.

**PROJECT: 03487-INVESTIGATION OF NONSTEADY STATE PHENOMENA OF STREAM SEDIMENTATION AND EFFECTS ON STREAM COMMUNITIES AND SALMONID POPULATIONS

STARTING/ COMPLETION DATE : 10/77 - 09/79 : FUNDING : ESTIMATED - FY78 / $ 36050
TASK CODE=M608A-026 **EPA=R805423-01 ** (GRANT) PRIOR FY77 / $ 45000

EPA OFFICER,: MA SHIRAZI EPA/ERL - CORVALLIS
INVESTIGATOR,: CE WARREN OREGON STATE UNIV SCH OF AGRIC/ENTOMOLOGY DEPT
MILESTONES...: 09/79 -FINAL REPORT
PLAN ID.....: (AP=608A)(DU=B115) FRESHWATER ECOLOGICAL PROCESSESS & EFFECTS
FINAL OUTPUT,: REPORT WHICH DEVELOPS & VERIFIES HABITAT CLASSES. P 0041
& BIOLOG. INVESTIGATIONS REQUIRED TO SEE IF HIERACH 0041
OF HABITAT INDEED WORK. 0041
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-003487 SSIE-ZZ 274 EPA -R805423-01 TASK-M608A-026
ORD -RM10C30-1078 MAND-10-01 AP -608A
DU -B115 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVE: THE GENERAL OBJECTIVE OF THIS PROJECT IS TO DEVELOP A COMPREHENSIVE RESEARCH PLAN FOR INVESTIGATION OF NONSTEADY PHENOMENA OF STREAM SEDIMENTATION AND ITS EFFECT ON BIOLOGICAL COMMUNITIES AND SALMONID POPULATIONS. THE PLAN WILL BE INTENDED TO PROVIDE THE UNDERSTANDING NECESSARY TO SPECIFY WATERSHED MANAGEMENT PRACTICES THAT WILL MINIMIZE HARMFUL EFFECTS OF STREAM SEDIMENTATION. FINAL OUTPUT: A REPORT WHICH DEVELOPS AND VERIFIES HABITAT CLASSES. PRELIMINARY PHYSICAL AND BIOLOGICAL INVESTIGATIONS ARE REQUIRED TO SEE IF HIERARCHICAL CLASSIFICATIONS OF HABITAT, AS SUGGESTED HERE, INDEED WORK. THE CLASSIFICATION SCHEME CAN BE USED AS A BLUEPRINT FOR DESIGN AND INTEGRATION OF NONPOINT SOURCE WORK.

**PROJECT: 03622-RELATIONSHIP BETWEEN BLACK MANGROVE FOREST AND ESTUARINE WATERS

STARTING/ COMPLETION DATE : 07/77 - 11/78 : FUNDING : ESTIMATED - FY78 / $ 9500
TASK CODE=M644A-027 **EPA=R805424-01 ** (GRANT) PRIOR FY77 / $ 35000
EPA/ERL - CORVALLIS
EPA OFFICER.: HV KIBBY STATE UNIV OF FLORIDA SYS CTR FOR WETLANDS
INVESTIGATOR.: A LUGO
MILESTONES...: 11/78 -FINAL REPORT
PLAN ID.....: (AP-644A)(DU-) PLAN 644A
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-003622 SSIE-ZZ 288 EPA -R805424-01 TASK-M644A-027
ORD -RM10C51-1078 MAND-10-01 AP -644A
PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
COMMENT.....: SPLIT FUNDING 18A608-$9500. 0044
ABSTRACT.....: EXPORTS AND IMPORTS OF DISSOLVED AND PARTICULATE ORGANIC MATTER WILL BE MEASURED FROM SELECTED BLACK MANGROVE FORESTS IN THE WEST COAST OF FLORIDA. RESULTS SHOULD SHOW NET EXPORTS OF ORGANIC MATTER FROM BLACK MANGROVES TO ESTUARINE WATERS. THEY SHOULD ALSO SHOW THAT BLACK MANGROVE STANDS THAT ARE APPARENTLY ISOLATED FROM THE SEA DO HAVE PERIODIC EXCHANGES WITH THE SEA AND THAT THESE EXCHANGES ARE IMPORTANT TO THE MAINTENANCE OF REGIONAL PRODUCTIVITY.

**PROJECT: 00630-FEASIBILITY OF USING CHLORINE DIOXIDE IN THE DISINFECTION OF MUNICIPAL WASTEWATER EFFLUENTS

STARTING/ COMPLETION DATE : 09/77 - 09/79 : FUNDING : ESTIMATED - FY78 / $ 67500
TASK CODE=C6118-7057 **EPA=R805426-01 ** (GRANT) PRIOR FY77 / $ 69030
EPA/MERL - CINC
EPA OFFICER.: MC MECKES SCH OF ENG/CIV ENG DEPT
INVESTIGATOR.: PV ROBERTS STANFORD UNIV SCH OF ENG/CIV ENG DEPT
PL MCCARTY STANFORD UNIV SCH OF ENG/CIV ENG DEPT
M REINHARD STANFORD UNIV
MILESTONES...: 09/78 -INTERIM REPORT PUBLISHED (SYMPOSIUM)
03/80 -FINAL REPORT PUBLISHED
PLAN ID.....: (AP-6118)(DU-B106) WASTEWATER TREATMENT TECHNOLOGY PROGRAMS
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-000630 SSIE-GMA 3969 1 EPA -R805426-01 TASK-C6118-7057
ORD -RC10830-1078 MAND-10-01 AP -6118
DU -B106 LABT-ALW
PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: CHLORINE DIOXIDE WILL BE EVALUATED AS AN ALTERNATIVE TO CHLORINE FOR THE DISINFECTION OF WASTEWATER. PRINCIPAL CRITERIA ARE: (A) EFFECTIVENESS IN KILLING FECAL COLIFORM BACTERIA, AND (B) COST OF GENERATION AND APPLICATION. THE DOSE-KILL RELATIONSHIP WILL BE INVESTIGATED IN LABORATORY-SCALE DISINFECTION EXPERIMENTS, IN WHICH THE EFFECTS OF DOSE TIME, PH AND TEMPERATURE KILL WILL BE STUDIED. BASED ON THESE EXPERIMENTS AND A SURVEY OF THE SCIENTIFIC LITERATURE, USERS' EXPERIENCE, AND COMMERCIALLY AVAILABLE GENERATION TECHNOLOGY, A CONCEPT FOR DISINFECTION FACILITIES WILL BE DEVELOPED AND TESTED AT PILOT SCALE. PRELIMINARY DESIGN AND COST ESTIMATION OF FACILITIES IN THE RANGE OF 1 MGD TO 100 MGD WILL PROVIDE THE BASIS OF AN EVALUATION OF ECONOMIC FEASIBILITY. THE COMPARATIVE EFFECTIVENESS OF CHLORINE AND CHLORINE DIOXIDE IN KILLING COLIFORMS AND VIRUS WILL BE DETERMINED IN A LIMITED NUMBER OF PARALLEL EXPERIMENTS, AS WILL THE FORMATION OF VOLATILE, CHLORINATED ORGANIC SUBSTANCES.

**PROJECT: 02265-ANALYSIS AND CHARACTERIZATION OF ORGANIC CARBON COMPOUNDS IN ATMOSPHERIC PARTICULATE MATTER
STARTING/ COMPLETION DATE : 10/77 - 10/81 : FUNDING : ESTIMATED - FY78 / $ 40000
TASK CODE=G7128-BE-70 **EPA=R805427-01 ** (GRANT) PRIOR FY77 / $ 60000

EPA OFFICER,: JD MULIK EPA/ESRL - RTP
INVESTIGATOR,: H FREISER UNIV OF ARIZONA SCH OF LIBERAL ARTS
J MOYERS UNIV OF ARIZONA SCH OF LIBERAL ARTS
N KORTE UNIV OF ARIZONA SCH OF LIBERAL ARTS
MILESTONES...: 12/81 -FINAL REPORT: METH. FOR TOTAL C, ORGANIC C, AND ELEM. C IN PARTIC ULATES
PLAN ID.....: (AP-7128)(DU-A130) CHAR. AND MEASUREMENT METHODS DEVELOPMENT (AIR)
MANDATE.....: 10-02 CLEAN AIR ACT 0046
CURR. RESULTS: METHOD HAS BEEN DEVELOPED FOR TOTAL CARBON IN PARTI TASK-G7128-BE-70
ORDIS CODES..: RECN-002265 SSIE-ZZ 158 EPA -R805427-01 MAND-10-02
ORD -RG10C30-1078 LABN-G7128-BB-48 LABT-ALM
AP -7128 DU -A130
PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH

ABSTRACT.....: THE RESEARCH WORK CONDUCTED UNDER THIS PROJECT WILL BE DEDICATED TO THE DEVELOPMENT OF A RELIABLE, CONVENIENT AND UNIVERSALLY APPLICABLE METHOD FOR THE DETERMINATION OF TOTAL CARBON IN ATMOSPHERIC PARTICULATE SAMPLES. IT IS ALSO EXPECTED THAT A QUALITATIVE DESCRIPTION OF THE MAJORITY OF ORGANIC SPECIES PRESENT IN ATMOSPHERIC PARTICULATE MATTER BE ACHIEVED. THIS WILL PROVIDE, MOST IMMEDIATELY, A SOUND BASIS FOR THE DEVELOPMENT OF THE TOTAL CARBON METHOD. IT WILL ALSO PROVIDE ESSENTIAL INFORMATION NEEDED TO DEVELOP OTHER ANALYTICAL METHODS AS WELL AS IN THE FUNDAMENTAL UNDERSTANDING OF ATMOSPHERIC CHEMISTRY. THE WORK DESCRIBED AND THE RESULTS EXPECTED WILL PROVIDE A DIRECT AND SIGNIFICANT BENEFIT TO THE DEVELOPMENT OF MORE EFFECTIVE ATMOSPHERIC POLLUTION CONTROL STRATEGIES. IT IS PLANNED TO ATTACK THE PROPOSED RESEARCH IN THE FOLLOWING FASHION: (1) INVESTIGATE THE USE OF SELECTIVE SOLVENT EXTRACTION COUPLED WITH HIGH PERFORMANCE LIQUID CHROMATOGRAPHY AND TOTAL CARBON MEASUREMENT INSTRUMENTATION IN SEPARATING THE ORGANIC CARBON COMPOUND FRACTIONS OF ATMOSPHERIC SAMPLES INTO CLASSES AND SUBSEQUENTLY INTO INDIVIDUAL SPECIES, AND (2) DEVELOP AND EVALUATE SENSITIVE INSTRUMENTAL METHODS OF ORGANIC CARBON MEASUREMENTS FOR BULK AND SIZE SEPARATED SAMPLES COLLECTED ON GLASS AND TEFLON SUBSTRATES. THESE TECHNIQUES WILL INCLUDE OXIDATION BY COMBUSTION, ATOMIC OXYGEN AND WET CHEMICAL PROCEDURES (USING BOTH EXTRACTED AND UNEXTRACTED SAMPLES) WITH SUBSEQUENT CO2 DETECTION. RESULTS: METHOD HAS BEEN DEVELOPED FOR TOTAL CARBON IN PA

**PROJECT: 02831-BIOSYNTHESIS OF N-NITROSU COMPOUNDS FROM TRACE LEVEL PRECURSURS

STARTING/ COMPLETION DATE : 09/77 - 03/80 : FUNDING : ESTIMATED - FY78 / $ 160000
TASK CODE=J601F-05 **EPA=R805431-02 ** (GRANT) PRIOR FY77 / $ 100000

EPA OFFICER.: JA SANTOLUCITO EPA/EMSL - LAS VEGAS
INVESTIGATOR.: SS EPSTEIN UNIV OF ILLINOIS MED CTR/ENV HLTH SCI
ZM IQBAL UNIV OF ILLINOIS MED CTR/ENV HLTH SCI
MILESTONES...: 09/78 -REPORT ON ANALYTICAL METHOD FOR DETECTION OF NITROSAMINES
09/79 -REPORT ON BIOSYNTHESIS OF DIMETHYL NITROSAMINE IN THE MOUSE
12/79 -REPORT ON A STRATEGY FOR CARCINOGEN PRECURSOR EXPOSURE MONITORING
PLAN ID.....: (AP=601F)(DU=A105) CONTRIBUTION OF ENVIRONMENTAL FACTORS TO CANCER IN HUMANS
FINAL OUTPUT.: ASSESSMENT OF THE RATES OF IN-VIVO BIOSYNTHESIS OF 0016
COMPOUNDS FROM ENVIRONMENTAL LEVELS OF PRECURSORS, 0016
MANDATE.....: 30-99 SURE MONITIORING 0016
CURR. RESULTS: STUDIES HAVE BEEN INITIATED IN MICE FOLLOWING ADMIN 0016
OF NANOGRAM QUANTITIES OF VARIOUS AMINES (DIMETHYLA 0016
DIETHYLAMINE, DIPROPYLAMINE,MORPHKOLINE) AND NITRIT 0016
ORDIS CODES..: RECN=002831 SSIE-GMA 4082 1 EPA =R805431-02 TASK-J601F-05
ORD =RJ10830-3078 MAND=30-99 AP =601F
DU =A105 LABT-HIS

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVE/APPROACH: TO INVESTIGATE THE BIOSYNTHESIS OF N-NITROSO COMPOUNDS (BOTH VOLATILE AND NON-VOLATILE) FROM TRACE LEVELS OF THEIR AMINE AND NITROSATING PRECURSORS USING THERMAL ENERGY ANALYZER TECHNIQUES WITH FROZEN ANIMAL PROCEDURES. FINAL OUTPUT: ASSESSMENT OF RATES OF IN-VIVO BIOSYNTHESIS OF N-NITROSO COMPOUNDS FROM ENVIRONMENTAL LEVELS OF PRECURSORS; CATALYTIC AND INHIBITORY EFFECTS OF DIFFERENT AGENTS ON THE NITROSAMINE BIOSYNTHESIS; ANALYTICAL METHODS FOR DETECTING LOW-LEVELS OF NITROSAMINES. RESULTS TO DATE: STUDIES HAVE BEEN INITIATED IN MICE FOLLOWING ADMINISTRATION OF NANOGRAM QUANTITIES OF VARIOUS AMINES (DIMETHYLAMINE, DIETHYLAMINE, DIPROPYLAMINE, MORPHOLINE) AND NITRITES.

**PROJECT: 03054-FLUVIAL TRANSPORT OF SEDIMENTS AND NUTRIENTS FROM NONPOINT SOURCES

STARTING/ COMPLETION DATE : 10/77 - 10/78 : FUNDING : ESTIMATED - FY78 / $ 34800
TASK CODE=K609A-445 **EPA=R805436 ** (GRANT) PRIOR FY77 / $ 88034

EPA OFFICER,: TO BARNWELL — EPA/ERL - ATHENS
INVESTIGATOR,: DB BAKER — HEIDELBERG COLLEGE — RIBER STUDIES LAB
FH VERHOFF — WEST VIRGINIA UNIV — CHEM ENG DEPT
MILESTONES...: 10/78 -INTERIM REPORT ON DATA COLLECTION
03/80 -FINAL REPORT ON DATA COLLECTION
PLAN ID.....: (AP-609A)(DU-R106) SOURCES, PROCESSES & SYSTEMS
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-003054 SSIE-GHA 3992 1 EPA -R805436 TASK-K609A-445
ORD -RK10B30-1078 MAND-10-01 AP -609A
DU -R106 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVES OF THIS STUDY ARE TO INVESTIGATE THE TRANSPORT AND PROCESSING OF NUTRIENTS AND SEDIMENTS AS THEY MOVE THROUGH THE DRAINAGE NETWORK OF A LARGE AGRICULTURAL RIVER BASIN. THE STUDY WILL UTILIZE A "NESTED" SET OF NINE STREAM GAGING/SAMPLING STATIONS IN THE SANDUSKY RIVER BASIN IN OHIO. DETAILED HYDROGRAPHS, SEDIMENT GRAPHS AND CHEMOGRAPHS WILL BE OBTAINED FOR ALL STORM EVENTS DURING THE STUDY PERIOD. MASS BALANCE COMPUTATIONS WILL BE MADE FOR WATER, SEDIMENT AND NUTRIENTS AS THEY MOVE THROUGH THE NETWORK. THE WAVE FRONT MOVEMENT OF THE HYDROGRAPH WILL BE USED TO SEPARATE SEDIMENT FROM SHEET EROSION FROM RESUSPENDED SEDIMENT. NUTRIENT MASS BALANCES WILL BE USED TO STUDY PROCESSING AND DELIVERY RATIOS ALONG THE RIVER. DELIVERY OF PHOSPHORUS FROM INLAND POINT SOURCES TO LAKE ERIE WILL ALSO BE STUDIED AS WELL AS THE EXTENT OF ANNUAL VARIABILITY IN NUTRIENT AND SEDIMENT YIELDS FROM AGRICULTURAL WATERSHEDS. INDIVIDUAL WATERSHED YIELD WILL BE CORRELATED WITH DETAILED LAND USE/LAND CAPABILITY DATA. A FINAL REPORT WILL BE PREPARED AT THE END OF THE PROJECT.

**PROJECT: 03888-EFFECTS OF DRILLING FLUIDS AND OIL IN CORALS OCCUPYING HARD-BANK COMMUNITIES

STARTING/ COMPLETION DATE : 07/77 - 06/79 : FUNDING : ESTIMATED - FY78 / $ 40300
TASK CODE=B625F-1-05 **EPA=R805441-02 ** (GRANT) PRIOR FY77 / $ 63000

EPA OFFICER,: NL RICHARDS — EPA/ERL -GULF BREEZE
INVESTIGATOR,: TJ BRIGHT — TEXAS A & M UNIV — SCH OF GEOSCI
JH THOMPSON — TEXAS A & M UNIV — SCH OF GEOSCI
MILESTONES...: 10/78 -DETERMINE CRITERIA FOR EFFECTS
12/79 -ASSESS EFFECTS OF CHEMICALS USED IN OIL DRILLING ON CORALS
PLAN ID.....: (AP-625F)(DU-N140) AIR, WATER AND MULTI-ROUTE EXPOSURE & THEIR EFFECTS (HEALTH)
ORDIS CODES..: RECN-003888 SSIE-ZZ 232 EPA -R805441-02 TASK-B625F-1-05
AP -625F DU -N140 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY- UNKN
ABSTRACT.....: AN EXPERIMENTAL DESIGN IS PROPOSED IN WHICH THE BEHAVIORAL AND PHYSIOLOGICAL REACTIONS OF SCLERACTINIAN CORALS INDIGENOUS TO HARD BANK COMMUNITIES IN THE GULF OF MEXICO ARE DETERMINED IN RESPONSE TO CHRONIC LOW LEVELS OF DRILLING FLUID COMPONENTS AND SHALE OIL PRODUCTS. THE DESIGN INCORPORATES TIME-LAPSE-MACROPHOTOGRAPHIC AND RESPIROMETRIC TECHNIQUES TO MEASURE THE RESPONSE PARAMETERS. THE CORALS SHALL BE EXPOSED TO THE CONTAMINANTS IN "FLOW THROUGH" AQUARIA ON BOARD A PLATFORM TWELVE MILES OFFSHORE OF PANAMA CITY. CONTROLS SHALL INCLUDE PARALLEL OBSERVATIONS OF CORALS EXPOSED TO UNCONTAMINATED SEA WATER IN IDENTICAL "FLOW THROUGH" AQUARIA, AND OF CORALS TRANSPLANTED TO THE SIDE OF THE PLATFORM AT A DEPTH SIMILAR TO THAT FROM WHICH THEY WERE CO

**PROJECT: 03928-EFFECTS OF DRILLING FLUIDS AND OIL IN CORALS OCCUPYING HARD-BANK COMMUNITIES
STARTING/ COMPLETION DATE : 07/77 - 06/79 : FUNDING : ESTIMATED - FY78 / $ 1500
TASK CODE=0787 -09 **EPA=R805441-02 ** (GRANT) PRIOR FY77 / $ 63900

EPA OFFICER..: NL RICHARDS EPA/ERL -GULF BREEZE
INVESTIGATOR..: TJ BRIGHT TEXAS A & M UNIV SCH OF GEOSCI
JH THOMPSON TEXAS A & M UNIV SCH OF GEOSCI
MILESTONES...: 10/78 -DETERMINE CRITERIA FOR EFFECTS
12/79 -ASSESS EFFECTS OF CHEMICALS USED IN OIL DRILLING ON CORALS
PLAN ID.....: (AP-787)(OU-) * NO TEXT FOUND **
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
20-62 DAA FOR ENERGY ,MINERALS, AND INDUSTRY
0014
30-99 UGY
ORDIS CODES..: RECN-003928 SSIE-GMA 5499 EPA -R805441-02 TASK-0787 -09
ORD -RW10830-5078 MAND-10-01 MAND-20-62
MAND-30-99 AP -787 LAB-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: AN EXPERIMENTAL DESIGN IS PROPOSED IN WHICH THE BEHAVIORAL AND PHYSIOLOGICAL REACTIONS OF SCLERACTINIAN CORALS INDIGENOUS TO HARD BANK COMMUNITIES IN THE GULF OF MEXICO ARE DETERMINED IN RESPONSE TO CHRONIC LOW LEVELS OF DRILLING FLUID COMPONENTS, SHALE OIL PRODUCTS, AND CARCINOGENS. THE DESIGN INCORPORATES TIME-LAPSE-MACROPHOTOGRAPHIC AND RESPIROMETRIC TECHNIQUES TO MEASURE THE RESPONSE PARAMETERS. THE CORALS SHALL BE EXPOSED TO THE CONTAMINANTS IN "FLOW THROUGH" AQUARIA ON BOARD A PLATFORM TWELVE MILES OFFSHORE OF PANAMA CITY. CONTROLS SHALL INCLUDE PARALLEL OBSERVATIONS OF CORALS EXPOSED TO UNCONTAMINATED SEA WATER IN IDENTICAL "FLOW THROUGH" AQUARIA, AND OF CORALS TRANSPLANTED TO THE SIDE OF THE PLATFORM AT A DEPTH SIMILAR TO THAT FROM WHICH THEY WERE CO

**PROJECT: 00831-FEASIBILITY STUDY OF GRANULAR ACTIVATED CARBON ADSORPTION AND ON-SITE REGENERATION

STARTING/ COMPLETION DATE : 08/77 - 11/80 : FUNDING : ESTIMATED - FY78 / $ 1178625
TASK CODE=C614A-7169 **EPA=R805443-01 ** (GRANT) PRIOR FY77 / $ 459000

EPA OFFICER.: J DEMARCO EPA/MERL - CINC
INVESTIGATOR.: AA ROSEN CINCINNATI WATER WORKS
R MILLER CINCINNATI WATER WORKS
C COLE CINCINNATI WATER WORKS
E KISPERT CINCINNATI WATER WORKS
MILESTONES...: 05-78 -INTERIM REPORT
03/79 -INTERIM REPORT
11/80 -FINAL REPORT PUBLISHED
PLAN ID.....: (AP-614A)(DU-C110) WATER SUPPLY - WATER TREATMENT & SYSTEMS
MANDATE.....: 10-13 SOLID WASTE DISPOSAL ACT
ORDIS CODES..: RECN-000831 SSIE-GMA 4058 1 EPA -R805443-01 TASK-C614A-7169
ORD -RC10830-1078 MAND-10-13 AP -614A
DU -C110 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: TO DETERMINE THE FEASIBILITY OF GRANULAR ACTIVATED CARBON ADSORPTION, UTILIZING EITHER DEEP BED CONTACTORS OR CONVENTIONAL DEPTH GRAVITY FILTERS WITH ON-SITE CARBON REGENERATION, FOR REMOVING SPECIFIC TRACE ORGANICS FROM OHIO RIVER WATER WHILE TREATING IT FOR HUMAN CONSUMPTION. SIX EXISTING RAPID SAND FILTERS OF THE CINCINNATI WATER WORKS TREATMENT PLANT WILL BE CONVERTED TO GRANULAR ACTIVATED CARBON BEDS. ORGANIC ADSORPTION FOR THREE CARBON MEDIA DEPTHS WILL BE STUDIED. CARBON CONTACTORS WILL BE INSTALLED TO RECEIVE THE EFFLUENT FROM ONE EXISTING RAPID SAND FILTER AND WILL BE OPERATED INDEPENDENTLY OF THE CARBON FILTERS. ORGANIC ADSORPTION WILL BE STUDIED. AN ACTIVATED CARBON REGENERATION UNIT WILL BE PROVIDED TO REGENERATE THE GRANULAR CARBON ON SITE. EFFICIENCY OF REGENERATED CARBON WILL BE STUDIED. TWO CARBON FILTERS OF EACH CARBON MEDIA DEPTH WILL BE PROVIDED SO THAT AT LEAST ONE OF EACH PAIR WILL BE FILTERING AT ALL TIMES WHILE THE OTHER MAY BE OUT OF SERVICE FOR MEDIA REPLACEMENT. ONE OF THE CARBON CONTACTORS WILL SERVE AS A STANDBY UNIT TO ALLOW CARBON REGENERATION WITHOUT PLANT SHUTDOWN. CARBON WILL BE REMOVED, REGENERATED AND RETURNED AS EFFICIENTLY AS POSSIBLE. THIS WILL ESTABLISH THE OPTIMUM COST OF USING ON-SITE REGENERATED CARBON.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
* OFFICE OF RESEARCH AND DEVELOPMENT *
LIST OF PROJECTS FROM MATCHED GRANT SYSTEM INPUT
ORDIS DATA EXTRACT

**PROJECT: 01340-IMPROVEMENT AND EVALUATION OF METHODS FOR SULFATE ANALYSIS

STARTING/ COMPLETION DATE : 10/77 - 10/78 : FUNDING : ESTIMATED - FY78 / $ 43500
TASK CODE=E621A-14 **EPA=R805447-01 ** (GRANT) PRIOR FY77 / $ 69300

EPA OFFICER.: JC PUZAK EPA/EMSL - RTP
INVESTIGATOR.: JJ WESOLOWSKI STATE DEPT. OF H
BR APPEL STATE DEPT. OF HEALTH
EL KOTHNY STATE DEPT. OF HEALTH
EM HOFFER STATE DEPT. OF HEALTH

MILESTONES...: 10/78 -COMPLETE EVALUATIONS OF INDIVIDUAL METHODS
10/78 -COMPLETE EVALUATION OF EXTRACTION METHODS

PLAN ID.....: (AP-621A)(DU-8136) QUALITY ASSURANCE
ORDIS CODES..: RECN-001340 SSIE-ZZ 240 EPA -R805447-01 TASK-E621A-14
AP -621A DU -8136 LABT-MTS
PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY- UNKN

ABSTRACT.....: THE OBJECTIVES OF THIS WORK INCLUDE: 1) (A) OPTIMIZING A SIMPLE ANALYTICAL PROCEDURE FOR SULFATE DETERMINATION AND EVALUATING IT FOR RUGGEDNESS; (B) EVALUATING A SERIES OF SULFATE METHODS; AND (C) EVALUATING TWO TECHNIQUES FOR EXTRACTING SULFATE FROM ATMOSPHERIC SAMPLES, 2) METHODS EVALUATION WILL INVOLVE DETERMINING THE PRACTICAL WORKING RANGE, PRECISION, ACCURACY, COMPARABILITY BETWEEN METHODS AND THE INFLUENCE OF POTENTIAL INTERFERENTS, 3) FOR THIS STUDY, THE PRACTICAL WORKING RANGE OF THE METHODS WILL BE DEFINED AS THE CONCENTRATION RANGE OF ANALYTE YIELDING CONSTANT VARIANCE AND ACCURACY. THE BARIUM SULFATE TURBIDIMETRIC PROCEDURE IS THE METHOD TO BE OPTIMIZED. THE SULFATE METHODS TO BE EVALUATED ARE THE OPTIMIZED TURBIDIMETRIC METHOD, THE COLOVOS AND MIDWEST RESEARCH VERSIONS OF THE AUTOMATED METHYLTHYMOL BLUE METHOD AND THE DIONEX ION CHROMATOGRAPH METHOD.

**PROJECT: 03142-THE EFFECTIVENESS OF VEGETATION BUFFER STRIPS FOR CONTROLLING SEDIMENT AND OTHER WATER POLLUTANTS FROM DISTURBED WATERSHEDS
STARTING/ COMPLETION DATE : 09/77 - 09/80 : FUNDING : ESTIMATED - FY78 / $ 54500
TASK CODE=K6178-427 **EPA=R805457-01 ** (GRANT) PRIOR FY77 / $ 184000

EPA OFFICER.: LA MULKEY UNKNOWN OFFICE
INVESTIGATOR.: DB SIMONS COLORADO STATE UNIV AGRIC ENG DEPT
RM LI COLORADO STATE UNIV AGRIC ENG DEPT
MILESTONES...: 09/78 -REPORT ON EFFECTIVENESS OF BUFFER STRIPS FOR SEDIMENT CONTROL
09/80 -DESIGN CRITERIA FOR STREAM-SIDE MANAGEMENT ZONES
PLAN ID.....: (AP-6178)(DU-) NONIRRIGATED CROP PRODUCTION
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: WECN-003142 SSIE-ZZ 322 EPA -R805457-01 TASK-K6178-427
ORD -RK10C30-1078 ORD -K7708-427 MAND-10-01
PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-UNKN CODE
ABSTRACT.....: THE PRIMARY OBJECTIVE OF THIS STUDY IS TO DEVELOP A METHODOLOGY FOR EVALUATING THE EFFECTIVENESS OF VEGETATION BUFFER STRIPS FOR CONTROLLING SEDIMENT AND OTHER MAJOR WATER POLLUTANTS SUCH AS NITROGEN AND PHOSPHORUS. THIS METHODOLOGY WILL BE DEVELOPED CONSIDERING THE PHYSICAL SIGNIFICANCE OF THE GOVERNING PROCESSES WHICH DOMINATE THE HYDROLOGIC, HYDRAULIC, AND VEGETATIVE ASPECTS OF THE BUFFER ZONE. THE DESIGN OF THE BUFFER STRIP WILL DETERMINE THE SIZE OF ZONE, SHAPE OF ZONE, AND TYPE OF VEGETATION IN THE BUFFER STRIP. THIS DETERMINATION WOULD BE INDEPENDENT OF THE LAND USE IN OTHER PARTS OF THE WATERSHED. THE HYDROLOGIC ANALYSIS WILL CONSIDER TYPE, DURATION, INTENSITY AND RECURRENCE INTERVAL OF STORMS, INFILTRATION RATE, WATERS, SEDIMENT RUNOFF, AND THE DISTRIBUTION OF OTHER MAJOR POLLUTANTS IN THE WATERSHED. THE HYDRAULIC ANALYSIS WILL CONSIDER THE RATE OF SURFACE RUNOFF, RESISTANCE TO FLOW, SEDIMENT TRAPPING EFFICIENCY, SEDIMENT AND OTHER MAJOR POLLUTANTS' RESISTANCE TIME, CHANNELIZATION FROM THE UPSTREAM AND PROGRESSIVE HEAD CUT FROM THE DOWNSTREAM END OF THE STRIP. THE HYDROLOGIC AND HYDRAULIC RESPONSE OF THE BUFFER STRIP IS DEPENDENT ON THE GEOMETRY OF THE WATERSHED. A RANGE OF CONDITIONS FROM FLAT LAND, INTERMEDIATE LAND, AND STEEP LAND WILL BE INVESTIGATED. THE VEGETATION ANALYSIS WILL CONSIDER THE TYPE, HEIGHT, DENSITY STIFFNESS, AND NATURAL AND FLOW-INDUCED VIBRATION FREQUENCY OF THE VEGETATIVE COVER.AN ENGINEERING ANALYSIS OF THE SEDIMENT CONTROL EFFICACY WILL BE MADE INITIALLY AND DOCUMENTED IN AN INTERIM REPORT. FINALLY, DESIGN CRITERIA INCLUDING THE DEVELOPED METHODOLOGY WIL

**PROJECT: 00955-SOIL DISPOSAL OF API PIT WASTES

STARTING/ COMPLETION DATE : 09/77 - 08/80 : FUNDING : ESTIMATED - FY78 / $ 69992
TASK CODE=C618A-7229 **EPA=R805474 ** (GRANT) PRIOR FY77 / $ 100000

EPA OFFICER.: RE LANDRETH EPA/MERL - CINC
INVESTIGATOR.: KR BROWN TEXAS A & M UNIV SCH OF AGRIC
MILESTONES...: 12/78 -INTERIM REPORT
12/80 -FINAL REPORT
PLAN ID.....: (AP=618A)(DU=D110) SOLID & HAZARDOUS WASTE MANAGEMENT
FINAL OUTPUT.: CRITERIA TO BE USED IN DESIGN, MANAGEMENT AND MONIT 0020
OF SOIL WASTE DISPOSAL OPERATIONS. 0020
MANDATE.....: 10-05 RESOURCE CONSERVATION AND RECOVERY ACT
ORDIS CODES..: RECN=000955 SSIE-GMA 4707 EPA =R805474 TASK=C618A-7229
ORD =RC10830-1078 MAND=10-05 AP =618A
DU =D110 LABT=ALW

PROJ STATUS..: PROJECT=ACTIVE DATA=ORIGINAL CATEGORY=RESEARCH
ABSTRACT.....: RESEARCH IS TO BE CONDUCTED ON THE LAND DISPOSAL OF API PIT WASTES. THE INVESTIGATION WILL UTILIZE THREE DIVERSE WASTES, AND TESTS WILL BE CONDUCTED ON SEVERAL SOILS REPRESENTING A RANGE OF CHARACTERISTICS. THE INVESTIGATION WILL BEGIN WITH CHARACTERIZATION OF THE WASTES. THIS DATA WILL BE USED TO DECIDE ON THE APPLICATION RATES TO BE USED IN THE STUDIES. MEASUREMENTS WILL BE MADE OF THE DECOMPOSITION RATE OF THE WASTES, THE INFLUENCE OF APPLICATIONS ON PLANT SURVIVAL AND GROWTH, AND THE CONCENTRATIONS OF POTENTIAL POLLUTANTS IN RUNOFF AND LEACHATE WATER. THE FATE AND MOBILITY OF THE WASTES IN THE SOIL WILL BE INVESTIGATED IN THE LABORATORY, IN GREENHOUSE TESTS, AND ULTIMATELY, IN FIELD TESTS. THE RESEARCH SHOULD PROVIDE INSIGHT INTO THE FEASIBILITY OF LAND DISPOSAL OF THIS CLASS OF WASTE, AND THE RESULTS WILL BE USED TO DEVELOP CRITERIA TO BE USED IN THE DESIGN, MANAGEMENT, AND MONITORING OF SOIL WASTE DISPOSAL OPERATIONS.

**PROJECT: 00956-SOIL DISPOSAL OF API PIT WASTES

STARTING/ COMPLETION DATE : 09/77 - 08/80 : FUNDING : ESTIMATED - FY78 / $ 50000
TASK CODE=C618A-7229 **EPA=R805474 ** (GRANT) PRIOR FY77 / $ 120675

EPA OFFICER.: RE LANDRETH EPA/MERL - CINC
INVESTIGATOR.: KW BROWN TEXAS A & M UNIV SCH OF AGRIC
MILESTONES...: 12/78 -INTERIM REPORT
12/80 -FINAL REPORT
PLAN ID.....: (AP-618A)(DU-D110) SOLID & HAZARDOUS WASTE MANAGEMENT
FINAL OUTPUT.: CRITERIA TO BE USED IN DESIGN, MANAGEMENT AND MONIT 0020
OF SOIL WASTE DISPOSAL OPERATIONS. 0020
MANDATE.....: 10-05 RESOURCE CONSERVATION AND RECOVERY ACT
ORDIS CODES..: RECN=000956 SSIE-GMA 4707 1 EPA -R805474 TASK-C618A-7229
ORD -RC10830-1078 MAND-10-05 AP -618A
DU -D110 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: RESEARCH IS TO BE CONDUCTED ON THE LAND DISPOSAL OF API PIT WASTES. THE INVESTIGATION WILL UTILIZE THREE DIVERSE WASTES, AND TESTS WILL BE CONDUCTED ON SEVERAL SOILS REPRESENTING A RANGE OF CHARACTERISTICS. THE INVESTIGATION WILL BEGIN WITH CHARACTERIZATION OF THE WASTES. THIS DATA WILL BE USED TO DECIDE ON THE APPLICATION RATES TO BE USED IN THE STUDIES. MEASUREMENTS WILL BE MADE OF THE DECOMPOSITION RATE OF THE WASTES, THE INFLUENCE OF APPLICATIONS ON PLANT SURVIVAL AND GROWTH, AND THE CONCENTRATIONS OF POTENTIAL POLLUTANTS IN RUNOFF AND LEACHATE WATER. THE FATE AND MOBILITY OF THE WASTES IN THE SOIL WILL BE INVESTIGATED IN THE LABORATORY, IN GREENHOUSE TESTS, AND ULTIMATELY, IN FIELD TESTS. THE RESEARCH SHOULD PROVIDE INSIGHT INTO THE FEASIBILITY OF LAND DISPOSAL OF THIS CLASS OF WASTE, AND THE RESULTS WILL BE USED TO DEVELOP CRITERIA TO BE USED IN THE DESIGN, MANAGEMENT, AND MONITORING OF SOIL WASTE DISPOSAL OPERATIONS.

**PROJECT: 03801-CHEMICAL STUDIES DIRECTED TOWARDS ECOLOGICAL DAMAGE ASSESSMENT OF PETROLEUM DISCHARGES INTO THE MARINE ENVIRONMENT
STARTING/ COMPLETION DATE : 09/77 - 09/80 : FUNDING : ESTIMATED - FY78 / $ 30000
TASK CODE=P608C-11 **EPA=R805477-02 ** (GRANT) PRIOR FY77 / $ 64990

EPA OFFICER,: J LAKE EPA/ERL - NARR
INVESTIGATOR,: JG QUINN UNIV OF RHODE ISLAND SCH OF OCEANOGRAPHY
EJ HOFFMAN UNIV OF RHODE ISLAND SCH OF OCEANOGRAPHY
MILESTONES...: 09/80 -FINAL PROJECT REPORT
PLAN ID.....: (AP-608C)(OU-B115) MARINE & ESTUARINE ECOLOGICAL PROCESSESS & EFFECTS (IBA 608)
MANDATE.....: 20-10 AA FOR WATER AND HAZARDOUS MATERIALS
ORDIS CODES..: RECN-003801 SSIE-ZZ 243 EPA -R805477-02 TASK-P608C-11
ORD -RP10C30-2078 MAND-20-10 AP -608C
OU -B115 LABT-MEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVES: TO CONDUCT ANALYTICAL CHEMICAL STUDIES IN SUPPORT OF ECOLOGICAL DAMAGE ASSESSMENT OF ACUTE AND CHRONIC DISCHARGES OF PETROLEUM INTO THE NEAR-SHORE MARINE ENVIRONMENT. THESE STUDIES WILL INCLUDE THE FOLLOWING: (1) CHEMICAL ANALYSES OF PETROLEUM COMPOUNDS IN SELECTED SAMPLES OF WATER, SEDIMENTS AND ORGANISMS USING A VARIETY OF ANALYTICAL PROCEDURES (E.G. COLUMN, THIN-LAYER AND GAS CHROMATOGRAPHY; INFRARED SPECTROSCOPY; AND COMBINED GAS CHROMATOGRAPHY-MASS SPECTROMETRY), (2) DEVELOPMENT OF NEW METHODS AND MODIFICATION OF EXISTING PROCEDURES IN SUPPORT OF TOXICOLOGICAL AND FIELD STUDIES, (3) PARTICIPATION WITH OTHER LABORATORIES IN THE DEVELOPMENT AND INTERCALIBRATION OF STANDARD REFERENCE MATERIALS AND METHODS FOR PETROLEUM ANALYSIS. APPROACH AND CURRENT PLANS; SAMPLES WILL BE COLLECTED FROM SELECTED SPILLS OF OPPORTUNITY AND SITES OF CHRONIC OIL DISCHARGES. THE BASIC ANALYSES OF THESE SAMPLES WILL INVOLVE EXTRACTION, ISOLATION OF PETROLEUM COMPOUNDS BY COLUMN AND/OR THIN-LAYER CHROMATOGRAPHY, AND ANALYSIS BY GAS CHROMATOGRAPHY USING PACKED METAL COLUMNS AND GLASS CAPILLARY COLUMNS. SELECTED SAMPLE EXTRACTS WILL ALSO BE ANALYZED BY INFRARED SPECTROSCOPY, AND COMBINED GAS CHROMATOGRAPHY-MASS SPECTROMETRY. IN COMBINATION WITH FIELD EVALUATION AND LABORATORY TOXICOLOGICAL INVESTIGATIONS, THE PROPOSED RESEARCH WILL ALLOW A HIGHLY INTEGRATED, MULTIDISCIPLINARY STUDY OF THE FATE AND EFFECTS OF OIL ON THE MARINE ECOSYSTEM.

**PROJECT: 02694-ENZYMATIC CHARACTERIZATION AND DNA BINDING OF CARCINOGENS IN SHORT-TERM BIOASSAYS

STARTING/ COMPLETION DATE : 09/77 - 09/80 : FUNDING : ESTIMATED - FY78 / $ 103791
TASK CODE=M625F-7156 **EPA=R805482 ** (GRANT) PRIOR FY77 / $ 89954

EPA OFFICER,: JL HUISINGH EPA/HERL - RTP
INVESTIGATOR,: IB WEINSTEIN COLUMBIA UNIV COL OF PHYS & SURGEONS/PEDIATRICS
D GRUNBERGER COLUMBIA UNIV COL OF PHYS & SURGEONS/PEDIATRICS
AM JEFFREY COLUMBIA UNIV COL OF PHYS & SURGEONS/PEDIATRICS
MILESTONES...: 02/78 -ISOLATE BAP-DNA BOUND ADDUCTS FROM 10T1/2 BIOASSAY
05/78 -CHARACTERIZE BAP-DNA BOUND ADDUCTS FROM 10T1/2
06/78 -ISOLATE BAP-DNA BOUND ADDUCTS FROM AMES BIOASSAY
09/78 -CHARACTERIZE BAP-DNA BOUND ADDUCTS FROM AMES
PLAN ID.....: (AP-625F)(OU-N140) AIR, WATER AND MULTI-ROUTE EXPOSURE & THEIR EFFECTS (HEALTH)
MANDATE.....: 10-03 TOXIC SUBSTANCES CONTROL ACT
20-62 DAA FOR ENERGY ,MINERALS, AND INDUSTRY
30-99 INOGENESIS 0011
CURR, RESULTS: PROGRESS HAS BEEN MADE IN ISOLATING AND CHARACTERIZ 0011
BP-DNA ADDUCTS FROM SALMONELLA TYPHIUMRIUM MUTAGENE 0011
BIOASSAY, AND 10T1/2 NEOPLASTIC TRANSFORMATION! BIO 0011
ORDIS CODES..: RECN-002694 SSIE-GMA 4832 1 EPA -R805482 TASK-M625F-7156
ORD -RM10830-5078 MAND-10-03 MAND-20-62
MAND-30-99 AP -625F OU -N140 LABT-HEE

PROJ STATUS..: PROJEC:-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: SEVERAL SHORT-TERM IN VITRO TESTS FOR MUTAGENICITY AND CARCINOGENICITY ARE CURRENTLY BEING EVALUATED FOR MONITORING THE THOUSANDS OF ENVIRONMENTAL AGENTS WHICH REQUIRE SCREENING AS POSSIBLE CARCINOGENS. THESE IS A PAUCITY OF INFORMATION ON WHETHER OR NOT THE ACTIVATION OF A KNOWN CARCINOGEN AND ITS COVALENT BINDING TO CELLULAR DNA IN THESE IN VITRO SYSTEMS IS QUANTITATIVELY AND QUALITATIVELY SIMILAR TO THAT WHICH OCCURS IN INTACT MAMMALIAN CELLS, OR IN THE WHOLE ANIMAL. THE OBJECTIVE OF THIS PROJECT IS TO EXAMINE THE MODIFIED DNA FROM CELLS USED IN THESE ASSAYS AFTER EXPOUSRE TO THE UBIQUITOUS CARCINOGEN BENZO(A)PYRENE (BP). THE APPROACH WILL BE TO INCUBATE TRITIUM LABELED BP WITH MICROSOMES AND SALMONELLA TYPHIMURIUM TESTER STRAINS, OR WITH VARIOUS MAMMALIAN CELL LINES. CELLULAR DNA WILL THEN BE EXTRACTED, ANALYZED FOR RADIOACTIVITY AND FLUORESCENCE, AND THEN HYDROLYZED TO NUCLEOSIDES WHICH WILL BE ANALYZED BY HIGH PRESSURE LIQUID CHROMATOGRAPHY, UTILIZING APPROPRIATE BP-NUCLEOSIDE DERIVATIVES PREPARED CHEMICALLY AS MARKERS TO DETERMINE THE NATURE OF THE BP-NUCLEOSIDE ADDUCTS PRESENT. PARALLEL ASSAYS WILL BE DONE FOR MUTAGENICITY AND TRANSFORMATION AND OF ARYL HYDROCARBON HYDROXYLASE AND EPOXIDE HYDRATASE ACTIVITIES. THE DATA WILL BE CORRELATED WITH OUR RESULTS OBTAINED IN INTACT HUMAN TISSUES WHERE IT HAS BEEN POSSIBLE TO DETERMINE THE STRUCTURE OF THE MAJOR ADDUCT FORMED. PROGRESS HAS BEEN MADE IN ISOLATING AND CHARACTERIZING THE BP-DNA ADDUCTS FROM THE FOLLOWING TWO TEST SYSTEMS: 1) SALMONELLA TYPHIUMRIUM MUTAGENESIS BIOASSAY; AND 2) 10T1/2 NEOPLASTIC TRANSFORMATION BIOASSAY. IN BOTH CASES THE MAJOR BP-DNA ADDUCT FOUND IN HUMAN BRONCHUS AND OTHER MAMMALIAN CELLS WAS IDENTIFIED, HOWEVER ADDITIONAL

**PROJECT: 03846-THE ECOLOGICAL IMPACT OF INTEGRATED CHEMICAL AND BIOLOGICAL AQUATIC WEED

STARTING/ COMPLETION DATE : 06/78 - 07/81 : FUNDING : ESTIMATED - FY78 / $ 175000
TASK CODE=G608A-1-01 **EPA=R805497-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: TW DUKE EPA/ERL -GULF BREEZE
INVESTIGATOR.: JV SHIREMAN UNIV OF FLORIDA SCH OF FOREST RES & CONSRV
MILESTONES...: 06/79 -ANNUAL REPORT ON FIELD STUDY
06/80 -ANNUAL REPORT ON BIOLOGICAL CONTROL
06/81 -FINAL REPORT ON BIOLOGICAL/CHEMICAL CONTROL STRATEGY
PLAN ID.....: (AP=608A)(DU=A115) FRESHWATER ECOLOGICAL PROCESSESS & EFFECTS
ORDIS CODES..: RECN=003846 SSIE-GMA 4945 EPA -R805497-01 TASK-G608A-1-01
AP -608A DU -A115 LABT-HEE
PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY- UNKN
ABSTRACT.....: TO DETERMINE THE IMPACT OF CHEMICAL/BIOLOGICAL CONTROL IN THE FISHERY ENVIRONMENT, AND TO ASCERTAIN THE MOST DESIRABLE BALANCE OF VEGETATION VERSUS OPEN WATER THAT WILL MAINTAIN DESIRABLE WATER QUALITY, FISH GROWTH, AND REPRODUCTION. TO EVALUATE THE FEASIBILITY OF COMBINING CHEMICAL AND BIOLOGICAL WEED CONTROL IN A NATURAL LAKE AND DETERMINE COST BENEFIT RATIOS, AND TO DETERMINE THE EFFECTS OF DENSE SUBMERGED AQUATIC WEED GROWTH ON THE RECREATIONAL UTILIZATION AND FISH POPULATIONS OF ORANGE LAKE, FLORIDA.

**PROJECT: 01715-AIRCRAFT RADIATION MEASUREMENTS OVER ST. LOUIS

STARTING/ COMPLETION DATE : 09/77 - 09/78 : FUNDING : ESTIMATED - FY78 / $ 0
TASK CODE=G603A-AA-36 **EPA=R805500-01 ** (GRANT) PRIOR FY77 / $ 16000

EPA OFFICER.: FS HINKOWSKI EPA/ESRL - RTP
INVESTIGATOR.: TN CARLSON PENNSYLVANIA STATE UNIV EARTH & MINERAL SCI/METEOR DEPT
RG CUNNINGHAM PENNSYLVANIA STATE UNIV EARTH & MINERAL SCI/METEOR DEPT
MILESTONES...: 09/78 -FINAL REPORT ON RADIATION MEASUREMENT
PLAN ID.....: (AP=603A)(DU=A125) ATMOSPHERIC PROCESSES AND EFFECTS
MANDATE.....: 10-02 CLEAN AIR ACT
ORDIS CODES..: RECN=001715 SSIE-GMA 4473 1 EPA -R805500-01 TASK-G603A-AA-36
ORD -RG10H30-1078 LABN-G603A-AA-55 MAND-10-02
AP -603A DU -A125 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: AIRCRAFT RADIATION MEASUREMENTS MADE ON BOARD THE PENN STATE AEROCOMMANDER DURING THE 1976 AND 1974 ST. LOUIS RAPS PROJECT WILL BE PROCESSED AND THE DATA REDUCED FOR THE PURPOSES OF ASSESSING THE EFFECTS OF AEROSOLS IN THE URBAN BOUNDARY LAYER ON TRANSMISSION AND FOR TESTING OF RADIATIVE TRANSFER MODELS.

**PROJECT: 00291-SURVEY OF SELECTED CARCINOGEN EMISSIONS IN NEW JERSEY

STARTING/ COMPLETION DATE : 07/78 - 10/80 : FUNDING : ESTIMATED - FY78 / $ 55000
TASK CODE=R6108-849 **EPA=R805501-02 ** (GRANT) PRIOR FY /
EPA OFFICER,: H SKOVRUNEK EPA/IERL - CINC
INVESTIGATOR,: PW PREUSS STATE DEPT OF ENV PROT
MILESTONES...: 10/80 -FINAL REPORT RECEIVED
PLAN ID.....: (AP=6108)(DU=B118) MATERIALS PROCESSING, INDUSTRIAL PT. SOURCES (WATER)
MANDATE.....: 40-99 0015
ORDIS CODES..: RECN=000291 SSIE-GMA 5464 EPA -R805501-02 TASK-R6108-849
ORD -RB10B30-4078 MAND-40-99 AP -6108
DU -B118 LABT-EMI

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVES OF THE PROJECT: 1. TO ESTABLISH A COMPUTERIZED DATA BASE CONCERNING THE MANUFACTURE, USE, STORAGE, PROCESSING, FORMATION, RELEASE, DISPOSAL AND REPACKAGAGING IN NJ OF A GROUP OF CARCINOGENIC SUBSTANCES SELECTED ON THE BASIS OF THEIR LARGE VOLUME OF PRODUCTION AND/OR THEIR CARCINOGENICITY. 2. TO IDENTIFY THE AREA OF THE STATE AND POPULATION GROUP THAT ARE SUBJECT TO AN INCREASED CANCER RISK DUE TO EXPOSURE TO CANCER CAUSING SUBSTANCES AND OTHER TOXIC AGENTS IN THE ENVIRONMENT. 3. TO ESTABLISH A BASE FOR THE STUDY OF METHODS OF REDUCING OR ELIMINATING THE RELEASE OF CARCINOGENS INTO THE ENVIRONMENT. THE DATA BASE WILL PERMIT DETERMINATIONS OF THE FOLLOWING: A. A COMPREHENSIVE INVENTORY OF THE SELECTED CARCINOGENS IN NEW JERSEY: B. THE INDUSTRIAL LOCATIONS WHERE THE SELECTED CARCINOGENS ARE USED, MANUFACTURED, STORED, RELEASED, FORMED, REPACKAGED, ETC. AND THE QUANTITY OF THE CARCINOGEN HANDLED AT EACH LOCATION; C. THE PRODUCTS WHICH ARE MANUFACTURED FROM THE SELECTED CARCINOGENS; D. THE QUANTITY OF THE SUBSTANCES EMITTED AND/OR RELEASED TO THE ATMOSPHERE, WATER AND SOLID WASTE STREAM; E. THE POTENTIAL OCCUPATIONAL AND COMMUNITY EXPOSURE TO THE SELECTED MATERIALS.

**PROJECT: 03278-A STUDY AND ANALYSIS OF THE MUNCIE, INDIANA INDUSTRIAL PRETREATMENT PROGRAM
STARTING/ COMPLETION DATE : 09/77 - 09/78 : FUNDING : ESTIMATED - FY78 / $ 98000
TASK CODE=L610F-21 **EPA=R805528-02 ** (GRANT) PRIOR FY77 / $ 72500
EPA OFFICER,: TE SHORT EPA/ERL - ADA
INVESTIGATOR,: J CRADDOCK MUNCIE SAN DIST DIV OF WATER QUAL
MILESTONES...: 09/78 -COMPLETE PHASE I - ISSUE INTERIM REPORT
09/79 -COMPLETE PROJECT - ISSUE FINAL REPORT
PLAN ID.....: (AP=610F)(DU=B118) COMBINED PROCESSES
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN=003278 SSIE-ZZ 266 EPA -R805528-02 TASK-L610F-21
ORD -RL10C30-1078 LABN-L610F-51A MAND-10-01
AP -610F DU -B118 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVES OF THIS PROJECT ARE AS FOLLOWS: PROVIDE COMMUNITIES, INDUSTRIES, REGULATORY AGENCIES, CONSULTANTS, AND OTHER INTERESTED PARTIES WITH DESCRIPTIVE INFORMATION WHICH WOULD LEND GUIDANCE IN IMPLEMENTING INDUSTRIAL WASTEWATER PRETREATMENT PROGRAMS. DETERMINE THE ABILITY OF EXISTING MUNCIE ACTIVATED SLUDGE TREATMENT FACILITY TO REMOVE OR ALTER THE CONCENTRATION OF SELECTED TOXIC COMPOUNDS. PROVIDE MUNCIE WITH TOXIC COMPOUNDS DATA RELATIVE TO THE WASTEWATER TREATMENT PLANT INFLUENT AND EFFLUENT. THE COMPLETED PROJECT WILL INCLUDE A DESCRIPTION OF THE MUNCIE AREA, HISTORY OF THE PRETREATMENT PROGRAM, THE SEWER USE ORDINANCE, INDUSTRIAL MONITORING EFFORT, USER SURCHARGE PROCESS, INDUSTRIAL COST RECOVERY PROVISION, SLUDGE APPLICATION PROGRAM, INSTITUTIONAL FACTORS, ADMINISTRATIVE FACTORS, EFFECTS OF PRETREATMENT PROGRAM ON WASTEWATER, AND PRETREATMENT PROGRAM IMPACT ON INDUSTRY.

**PROJECT: 03129-RETENTION AND TRANSFORMATIONS OF PHOSPHOROUS AND SELECTED PESTICIDES IN SOILS AND SEDIMENTS
STARTING/ COMPLETION DATE : 11/77 - 10/80 : FUNDING : ESTIMATED - FY78 / $ 154200
TASK CODE=K6178-417 **EPA=R805529-02 ** (GRANT) PRIOR FY77 / $ 188600

EPA OFFICER,:	CN SMITH	EPA/ERL - ATHENS	
INVESTIGATOR,:	PS RAO	STATE UNIV SYS OF FLORIDA	SOIL SCI DEPT
	JM DAVIDSON	STATE UNIV SYS OF FLORIDA	SOIL SCI DEPT
	JJ STREET	STATE UNIV SYS OF FLORIDA	SOIL SCI DEPT
	VE HERKEISER	STATE UNIV SYS OF FLORIDA	SOIL SCI DEPT
	TL YUAN	STATE UNIV SYS OF FLORIDA	SOIL SCI DEPT
	WB WHEELER	STATE UNIV SYS OF FLORIDA	SOIL SCI DEPT
	PV RAO	STATE UNIV SYS OF FLORIDA	SOIL SCI DEPT
	LT OU	STATE UNIV SYS OF FLORIDA	SOIL SCI DEPT

MILESTONES...: 02/79 -INTERIM REPORT ON LITERATURE DATA AND INTERPRETIVE ANALYSIS
02/80 -INTERIM REP. LAB. STUDIES FOR SELECTED PEST. PHOSP. SOIL SYSTEMS
12/81 -FINAL REPORT - INPUT PARAMETERS FOR NONPOINT SOURCE MODEL

PLAN ID.....: (AP-6178)(DU-) NONIRRIGATED CROP PRODUCTION
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-003129 SSIE-ZZ 515 EPA -R805529-02 TASK-K6178-417
ORD -RK10C30-1078 LABN-K7708-417 MAND-10-01
AP -6178 LABT-ALA

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH

ABSTRACT.....: THE PROPOSED RESEARCH PROJECT CONSISTS OF THREE MAJOR PARTS. THE FIRST PART IS TO CONDUCT AN EXHAUSTIVE LITERATURE SEARCH TO COMPILE A PRELIMINARY DATA BASE OF RETENTION AND TRANSFORMATION CHARACTERISTICS OF COMMON PESTICIDES AND PHOSPHOROUS COMPOUNDS IN SOILS. THE SECOND PART OF THE PROJECT DEALS WITH BASIC LABORATORY EXPERIMENTS TO MEASURE EQUILIBRIUM AND KINETIC ADSORPTION-DESORPTION AND BOUND RESIDUE FORMATION CHARACTERISTICS, NONSINGULARITY OR IRREVERSIBILITY IN ADSORPTION-DESORPTION PROCESSES, AS WELL AS MEASUREMENT OF TRANSFORMATION RATES UNDER CONTROLLED SOIL ENVIRONMENTAL CONDITIONS. THE THIRD PART OF THE PROJECT INVOLVES ROUTINE MEASUREMENTS OF ADSORPTION-DESORPTION ISOTHERMS AND TRANSFORMATION RATES OF A LARGE NUMBER OF COMMON PESTICIDES USING A BROAD SPECTRUM OF SOIL TYPES FROM THROUGHOUT THE UNITED STATES. THE DATA BASE GENERATED BY THE PROPOSED PROJECT WILL THEN BE USED IN DEVELOPING GENERAL MULTIPLE REGRESSION EQUATIONS THAT RELATE RETENTION AND TRANSFORMATION COEFFICIENTS TO FUNDAMENTAL SOIL PROPERTIES. SUCH RELATIONSHIPS ARE URGENTLY NEEDED TO ESTIMATE MODEL INPUT PARAMETERS FOR THE NONPOINT SOURCE POLLUTION SIMULATION MODELS (SUCH AS EPA'S AGRICULTURAL RUNOFF MANAGEMENT MODEL, ARM) CURRENTLY USED TO IDENTIFY AND RECOMMEND SOIL CONSERVATION AND LAND USE MANAGEMENT PRACTICES CAUSING MINIMUM ENVIRONMENTAL CONTAMINATION. A MULTI-DISCIPLINARY TEAM OF RESEARCHERS (SOIL PHYSICS, SOIL CHEMISTRY, SOIL MICROBIOLOGY, PESTICIDE CHEMISTRY, AND STATISTICS) HAS BEEN ASSEMBLED TO ACCOMPLISH THE SPECIFIED PROJECT GOALS. A FINAL REPORT WILL BE PRE

**PROJECT: 01902-CHEMICAL REACTIONS OF ATMOSPHERIC HALOGENATED SPECIES

STARTING/ COMPLETION DATE : 08/77 - 08/80 : FUNDING : ESTIMATED - FY78 / $ 84770
TASK CODE=G603A-AI-07 **EPA=R805532-01 ** (GRANT) PRIOR FY /

EPA OFFICER,:	P NANST	EPA/ESRL - RTP	
INVESTIGATOR,:	MJ MOLINA	UNIV OF CALIFORNIA	CHEM DEPT
	FS ROWLAND	UNIV OF CALIFORNIA	CHEM DEPT
	LT MOLINA	UNIV OF CALIFORNIA	CHEM DEPT
	RS IYER	UNIV OF CALIFORNIA	CHEM DEPT

MILESTONES...: 09/80 -FINAL REPORT
PLAN ID.....: (AP-603A)(DU-A125) ATMOSPHERIC PROCESSES AND EFFECTS
MANDATE.....: 10-02 CLEAN AIR ACT
ORDIS CODES..: RECN-001902 SSIE-GMA 3582 1 EPA -R805532-01 TASK-G603A-AI-07
ORD -RG10830-1078 LABN-G603A-AF-09 MAND-10-02
AP -603A DU -A125 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH

ABSTRACT.....: THE PURPOSE OF THIS RESEARCH IS THE UNDERSTANDING OF THE VARIOUS ATMOSPHERIC CHEMICAL AND PHOTOCHEMICAL REACTION INVOLVING HALOGENATED SPECIES. THESE INCLUDE THE HALOCARBON COMPOUNDS IN CURRENT TECHNOLOGY, THE INTERMEDIATE HALOGENATED RADICALS RELEASED DURING THEIR ATMOSPHERIC DECOMPOSITION, AND COMPOUNDS FORMED IN SITU BY ATMOSPHERIC REACTIONS. THE ULTRAVIOLET ABSORPTION SPECTRA OF BROMINATED MOLECULES OFTEN EXTEND INTO THE 2900-3100A REGION NEAR THE ATMOSPHERIC CUT-OFF OF STRATOSPHERIC OZONE. LONG-PATH U.V. ABSORPTION SPECTRA WILL BE MEASURED FOR VARIOUS BROMINATED SPECIES (E.G. CBR2F2) TO DETERMINE WHICH MOLECULES CAN UNDERGO APPRECIABLE TROPOSPHERIC SOLAR PHOTODECOMPOSITION. THE CHEMICAL REACTION MECHANISMS OF IMPORTANT "SEMI-STABLE" MOLECULES FORMED IN THE ATMOSPHERE WILL BE STUDIED. FLASH PHOTOLYSIS WILL BE USED TO DETERMINE WHETHER THE HALOGENATED SPECIES RELEASED IN THE PHOTODECOMPOSITION OF CHLORINE NITRATE IS CLO, CLONO, CL OR CLNO. FLASH PHOTOLYSIS WILL BE USED TO DETERMINE WHETHER CLONO2 IS THE SOLE PRODUCT FROM THE REACTION OF CLO WITH NO2. PEROXYNITRIC ACID (HO2NO2) WILL BE SYNTHESIZED AND ITS U.V. ABSORPTION SPECTRUM WILL BE MEASURED. RADIOACTIVE TRACER TECHNIQUES WILL BE APPLIED TO THE DETERMINATION OF THE CHEMICAL FATE OF HALOGENATED RADICALS REACTING WITH AIR. THESE TRACER RADICALS CAN EFFECTIVELY SIMULATE THE VERY LOW CONCENTRATIONS OF ORGANIC SPECIES IN THE ACTUAL ATMOSPHERE. THE POSSIBLE FORMATION OF ALDEHYDES FROM THE OXIDATION OF HALO RADICALS WILL BE INVESTIGATED, E.G. FOR CH3CCL3, THE FORMATION OF 14CH3CCLO FROM 14CH3CCL2 PLUS O2. THE REACTIONS OF THE RESIDUAL RADICALS FROM CH3BR DECOMPOSITION WILL BE

**PROJECT: 00167-MEASUREMENT OF VOLATILE CHEMICAL EMISSIONS FROM WASTEWATER BASINS

STARTING/ COMPLETION DATE : 09/77 - 09/79 : FUNDING : ESTIMATED - FY78 / $ 30000
TASK CODE=B604B-618 **EPA=R805534-01 ** (GRANT) PRIOR FY77 / $ 125000

EPA OFFICER,: M STRUTZ EPA/IERL - CINC
INVESTIGATOR,: LJ THIBODEAUX UNIV OF ARKANSAS FAYETTEVILL CAMPUS
DG PARKER UNIV OF ARKANSAS FAYETTEVILL CAMPUS
MILESTONES...: 01/76 -LABORATORY REACTORS INITIATED
09/78 -FIELD SAMPLING INITIATED
05/79 -DATA ANALYSIS INITIATED
09/79 -FINAL REPORT RECEIVED
PLAN ID.....: (AP-6048)(DU-A128) MATERIALS PROCESSING, INDUSTRIAL PT, SOURCES (AIR)
FINAL OUTPUT,: EPA TECHNICAL REPORT SERIES 0004
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
10-02 CLEAN AIR ACT
ORDIS CODES..: RECN-000167 SSIE-ZZ 429 EPA -R805534-01 TASK-B604B-618
ORD -R810C30-1078 MAND-10-01 MAND-10-02
AP -6048 DU -A128 LABT-EMI

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVE: THE OBJECTIVE OF THIS STUDY IS TO DETERMINE THE MAGNITUDE OF BOTH SULFUR AND ORGANIC COMPOUNDS THAT ESCAPE INTO THE AIR FROM WASTEWATER TREATMENT FACILITIES AT PULP AND PAPER MILLS. THE RESULTS OF THIS STUDY WILL HELP TO ESTABLISH WHETHER WASTEWATER TREATMENT FACILITIES ARE A SIGNIFICANT SECONDARY EMISSION SOURCE OF SULFUR AND ORGANIC COMPOUNDS. THE RESULTS CAN ALSO BE USED TO ESTABLISH BASELINE QUANTITIES AND TO SUGGEST POSSIBLE CONTROL METHODS, IF REQUIRED. METHODS: BOTH LABORATORY AND FIELD INVESTIGATIONS WILL BE CONDUCTED. THE LABORATORY STUDY WILL BE DESIGNED PRIMARILY TO PERFECT APPROPRIATE WATER AND AIR SAMPLING TECHNIQUES. THIS PHASE WILL CONSIST OF RUNNING A LABORATORY SCALE BIOLOGICAL REACTOR AND SAMPLING BOTH THE LIQUID AND AIR PHASES. THE METHODS DEVELOPED DURING THIS STUDY WILL THEN BE USED TO CONDUCT FIELD INVESTIGATIONS. BOTH PHASES OF THIS PROJECT WILL TAKE APPROXIMATELY ONE YEAR TO COMPLETE. THE FIELD SAMPLING WILL CONSIST OF BOTH WATER AND AIR SAMPLING AT ACTUAL WASTEWATER TREATMENT FACILITIES. LIQUID SAMPLES WILL BE COLLECTED AT THE INFLUENT AND EFFLUENT LOCATIONS OF THE TREATMENT REACTORS AS WELL AS IN THE REACTORS THEMSELVES. AIR SAMPLES WILL BE COLLECTED AT STRATEGIC POINTS UPWIND AND DOWNWIND FROM THE BIOLOGICAL REACTORS AND POSSIBLY ABOVE THE REACTORS THEMSELVES. AIR SAMPLES WILL BE COLLECTED AT DIFFERENT ELEVATIONS SO THAT THE VERTICAL DISTRIBUTION OF POLLUTANTS CAN BE ESTABLISHED. THE RESULTS WILL BE PUBLISHED IN EPA TECHNICAL REPORT SERIES.

**PROJECT: 01776-GRADUATE RESEARCH IN AIR QUALITY METEOROLOGY

STARTING/ COMPLETION DATE : 08/77 - 08/80 : FUNDING : ESTIMATED - FY78 / $ 5000
TASK CODE=G603A-AB-39 **EPA=R805554-01 ** (GRANT) PRIOR FY77 / $ 41000

EPA OFFICER,: KL DEMERJIAN EPA/ESRL - RTP
INVESTIGATOR,: RJ SAUCIER UNIV OF NORTH CAROLINA SCH OF MATHS & PHYS SCI
TL TSUI UNIV OF NORTH CAROLINA SCH OF MATHS & PHYS SCI
GF WATSON UNIV OF NORTH CAROLINA SCH OF MATHS & PHYS SCI
MILESTONES...: 09/80 -FINAL REPORT
PLAN ID.....: (AP-603A)(OU-A125) ATMOSPHERIC PROCESSES AND EFFECTS
MANDATE.....: 10-02 CLEAN AIR ACT
ORDIS CODES..: RECN-00177G SSIE-GMA 4479 1 EPA -R805554-01 TASK-G603A-AB-39
ORD -RG10830-1078 LABN-G603A-AB-30 MAND-10-02
AP -603A OU -A125 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE PRINCIPAL OBJECTIVE, BEING BASED ON THE QUALIFICATIONS AND INTERESTS OF THE RESEARCH GROUP AND THE DATA ALREADY AVAILABLE, IS TO INVESTIGATE CERTAIN METEOROLOGICAL TRANSPORT CHARACTERISTICS, OF SCALE LARGER THAN HAS BEEN CUSTOMARY IN MICROMETEOROLOGICAL (LOCALIZED) APPROACHES, IN ORDER TO UNDERSTAND THE BROADER METEOROLOGICAL SCOPE OF AIR QUALITY REQUIRED FOR REFINING TRANSPORT-DISPERSION-DEPOSITION MODELS FOR AIR POLLUTANTS. A SECONDARY OBJECTIVE, WHICH IS CONSISTENT WITH THE UNIVERSITY'S PURPOSE AND THE PROXIMITY TO EPA LABORATORIES, IS TO ENCOURAGE AND GUIDE MORE AVAILABLE YOUNG SCIENTISTS INTO PURSUING THE PRINCIPAL OBJECTIVE UNDER THE TERM OF THE PROJECT AS WELL AS THEREAFTER. THE APPROACH AND THE WORK ARE STRUCTURED IN WHAT IS BELIEVED A LOGICAL HEIRARCHY OF TASKS WITH INSIGHT OR SOLUTION OF ONE PROBLEM AREA SERVING APPROACH TO THE NEXT. THESE ARE: (1) METEOROLOGICAL ANALYSIS OF REGIONAL AIR POLLUTION STUDY DATA, INVESTIGATING CONTROLS BY THE BROADER SYNOPTIC CONDITIONS, ESPECIALLY BY AIR TRAJECTORIES OVER A DAY AND MORE AND BY VERTICAL GRADIENTS IN THE HORIZONTAL FLUXES, (2) OXIDANT TRANSPORT IN THE LOWER TROPOSPHERE, AS AFFECTED BY DIURNAL VARIATIONS IN THE DEPTH OF THE MIXED LAYER, (3) MESOSCALE TRAJECTORIES, PARTICULARLY IN THE MIXING LAYER, EXAMINED AS DEPARTURES FROM SYNOPTIC-SCALE FLOW DUE TO MESOCALE TEMPERATURE FIELDS PRODUCED BY URBAN AREAS, BY NATURAL SURFACE DIFFERENCES, AND BY PATCHES OF CLOUD COVER OR CLEAR, (4) ATMOSPHERIC DEPOSITION CHEMISTRY (PARTICULATES AND RAINFALL) AS ASSOCIATED WITH THE ABOVE METEOROLOGICAL CHARACTERISTICS AND PROCESSES.

**PROJECT: 00281-UTILITY OF WET OXIDATION IN THE TREATMENT OF HAZARDOUS ORGANIC WASTES

STARTING/ COMPLETION DATE : 03/78 - 10/79 : FUNDING : ESTIMATED - FY78 / $ 40000
TASK CODE=B6108-748 **EPA=R805565-01 ** (GRANT) PRIOR FY77 / $ 90000

EPA OFFICER,: L WEITZMAN EPA/IERL - CINC
INVESTIGATOR,: JA KENT MICHIGAN TECH UNIV METALLURG ENG DEPT
CR BAILLOD MICHIGAN TECH UNIV METALLURG ENG DEPT
DG LEDOY MICHIGAN TECH UNIV METALLURG ENG DEPT
MILESTONES...: 10/79 -FINAL REPORT RECEIVED
PLAN ID.....: (AP-6108)(DU-B118) MATERIALS PROCESSING, INDUSTRIAL PT. SOURCES (WATER)
MANDATE.....: 30-99 R POLLUTION CONTROL 0015
ORDIS CODES..: RECN-000281 SSIE-ZZ 675 EPA -R805565-01 TASK-B6108-748
ORD -RB10B30-3078 MAND-30-99 AP -6108
DU -B118 LABT-EMI

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE MAIN OBJECTIVE OF THE PROPOSED RESEARCH IS TO DETERMINE THE UTILITY OF WET OXIDATION IN THE DESTRUCTION OF CERTAIN HAZARDOUS CHEMICALS AND TO DEVELOP ENGINEERING DATA WHICH WILL FACILITATE THE ESTIMATION OF COSTS OF WET OXIDATION FOR THE TREATMENT OF INDUSTRIAL ORGANIC WASTES. THIS WILL BE ACCOMPLISHED THROUGH A STUDY OF THE EFFECTS OF OPERATING VARIABLES (TEMPERATURE, OXYGEN PRESSURE, AGITATION INTENSITY, CATALYSTS, PH, RETENTION TIME) ON THE WET OXIDATION OF TYPICAL HAZARDOUS CHEMICALS USING BOTH A CONVENTIONAL BATCH AUTOCLAVE AND A CONTINUOUS FLOW MULTI-STAGE AUTOCLAVE. MAJOR EMPHASIS WILL BE PLACED ON THE IDENTIFICATION OF INTERMEDIATE AND FINAL REACTION PRODUCTS. PRACTICAL APPLICABILITY WILL BE ASSESSED BY SUBJECTING SAMPLES OF ACTUAL INDUSTRIAL WASTES TO WET OXIDATION. FINALLY, INFORMATION GATHERED IN THIS STUDY WILL BE USED TO PREPARE PROCESS FLOW SHEETS AND COST ESTIMATES FOR A COMMERCIAL UNIT TO TREAT AN INDUSTRIAL WASTE STREAM.

**PROJECT: 03699-SAMPLING, CHARACTERIZATION PLUS ANALYSIS MANUAL FOR DREDGED AND FILL MATERIALS

STARTING/ COMPLETION DATE : 08/77 - 07/79 : FUNDING : ESTIMATED - FY78 / $ 50000
TASK CODE=N608A-031 **EPA=R805572-01 ** (GRANT) PRIOR FY77 / $ 50000

EPA OFFICER,: MD MULLIN EPA/ERL - DULUTH
INVESTIGATOR,: RA SWEENEY STATE UNIV OF NEW YORK GREAT LAKES LAB
MILESTONES...: 07/79 -FINAL REPORT
PLAN ID.....: (AP-608A)(DU-B115) FRESHWATER ECOLOGICAL PROCESSESS & EFFECTS
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-003699 SSIE-ZZ 248 EPA -R805572-01 TASK-N608A-031
ORD -RN10C30-1078 LABN-N769 -031 MAND-10-01
AP -608A DU -B115 LABT-MEF

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVES: PROVIDE EPA AND CORPS OF ENGINEERS WITH A STATE-OF-THE-ART MANUAL FOR SAMPLING, CHARACTERIZATION, AND METHODS OF ANALYSIS TO INCLUDE QUALITY ASSURANCE PROGRAMS AND REPRESENT AREAS RELATING TO CONTAMINANTS FOUND IN DREDGED AND FILL MATERIAL AND WATER QUALITY ASSESSMENTS FOR AQUATIC DISPOSAL AND CONTAMINANT AREA EFFLUENT OR RUNOFF. FURTHER GOALS ARE TO PROVIDE INTERPRETIVE GUIDANCE CONCERNING IMPLEMENTATION OF RESULTS OF SAMPLING, CHARACTERIZATION, AND ANALYTICAL METHODS AND TO IDENTIFY AREAS WHERE PRESENT INFORMATION OR PROCEDURES ARE INCOMPLETE OR INADEQUATE AND RECOMMEND NECESSARY RESEARCH TO ELIMINATE THESE LIMITATIONS. APPROACH: MATERIAL WILL BE COMPILED VIA LITERATURE SEARCHES AND CONSULTATION WITH THOSE INVOLVED WITH THE ABOVE ACTIVITIES.

**PROJECT: 01055-MUTAGENESIS AND CARCINOGENESIS CHARACTERIZATION OF ORGANICS IN DRINKING WATER

STARTING/ COMPLETION DATE : 02/78 - 02/81 : FUNDING : ESTIMATED - FY78 / $ 276000
TASK CODE=D6078-003 **EPA=R805576-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: JP HERCZ EPA/HERL - CINC
INVESTIGATOR.: JC LOPER UNIV OF CINCINNATI CIV & ENV ENG DEPT
CC SMITH UNIV OF CINCINNATI CIV & ENV ENG DEPT
DR LANG UNIV OF CINCINNATI CIV & ENV ENG DEPT
MILESTONES...: 06/78 -MUTAGENIC SURVEY OF ALTERNATE DISINFECTANT TREATED RO CONCENTRATE S
12/78 -COMP. SURVEY OF SALMONELLA MUTAGENESIS IN RO CONCENT. FROM 5 CITE S
12/80 -OPTIMIZATION OF MUTAGENESIS ASSAYS
12/80 -DEVELOPMENT OF EPITHELIAL CELL TRANSFORMATION ASSAY
PLAN ID.....: (AP=6078)(DU=B103) CHARACTERIZATION & TESTING OF WATER & HAZARDOUS SUBSTANCES
MANDATE.....: 10-13 SOLID WASTE DISPOSAL ACT
ORDIS CODES..: RECN=001055 SSIE-GMA 5389 EPA =R805576-01 TASK=D6078-003
ORD =RD10830-1078 MAND=10-13 AP =6078
DU =B103 LABT=HEE

PROJ STATUS..: PROJECT=ACTIVE DATA=ORIGINAL CATEGORY=RESEARCH
ABSTRACT.....: THE OBJECTIVES ARE: 1. CONDUCT OF A COMPARATIVE SURVEY OF ORGANIC RESIDUES OF DRINKING WATER USING BOTH BACTERIAL AND TISSUE CULTURE SYSTEMS FOR IN VITRO DETECTION OF ACTIVE MUTAGENS AND CARCINOGENS. 2. TO STUDY THE METABOLIC EFFECT OF MUTAGENS/CARCINOGENS UPON THE DETECTOR SYSTEMS. 3. TEST ORGANICS FROM DRINKING WATER FOR PRESENCE OF PROMUTAGENS. 4. DEVELOP AN INTESTINAL EPITHELIAL CELL SYSTEM RESPONSIVE TO CHEMICAL CARCINOGENS. 5. FRACTIONATION OF ORGANICS FROM DRINKING WATER BY STANDARD MEANS ACCORDING TO THEIR PROPERTIES OF BACTERIAL TOXICITY AND MUTAGENESIS.THE SALMONELLA/MICROSOME SYSTEM WILL BE USED WITH TA98 AND TA100 BEING APPLIED IN INITIAL SURVEYS, FOLLOWED BY OTHER OF THE MAJOR AND ANCILLARY TESTERS. CLONE 3T3-113 OF MOUSE EMBRYO FIBROBLAST WILL BE STUDIED FOR TRANSFORMATION AND FOR MUTATION. A MOUSE INTESTINAL EPITHELIAL CELL SYSTEM WILL BE DEVELOPED USING CULTURE CONDITIONS TO FAVOR THE DESIRED TYPE. LIVER MICROSOMES WILL BE PREPARED FROM ANIMALS INDUCED BY CONVENTIONAL AND EXPERIMENTAL COMPOUNDS, BOTH WITH AND WITHOUT ADDED MICROSOMAL ACTIVATION. THE MECHANISMS OF MUTAGENESIS AND CARCINOGENESIS WILL BE EXAMINED IN TERMS OF CELL METABOLISM. BACTERIAL TESTERS WILL BE STUDIED RELATIVE TO THE GROWTH PHASE OF THE INOCULUM. MAMMALIAN CELL STUDIES WILL INCLUDE CO-CARCINOGEN AND CYCLIC NUCLEOTIDE EFFECTS, AND A MONITORING FOR VIRAL INDUCTION DURING CHEMICALLY INDUCED TRANSFORMATION. FRACTIONATION OF CHEMICALS FROM DRINKING WATER WILL BE BY METHODS BASED UPON SOLUBILITY PARAMETERS, AND BY HIGH PRESSURE LIQUID CHROMATOGRAPHY TECHNIQUES, ACCORDING TO THE ACTIVITY OF FRACTIONS IN THE SALMONELLA/MICROSOME SYSTEM.

**PROJECT: 01767-MODELING OF ATMOSPHERIC FLOWS AND POLLUTANT DISPERSAL OVER AND AROUND HILLS AND BUILDINGS

STARTING/ COMPLETION DATE : 09/77 - 08/80 : FUNDING : ESTIMATED - FY78 / $ 95000
TASK CODE=G603A-AH-34 **EPA=R805595-02 ** (GRANT) PRIOR FY77 / $ 65000

EPA OFFICER,:	W SNYDER	EPA/ESRL - RTP	
INVESTIGATOR,:	SP ARYA	UNIV OF NORTH CAROLINA	SCH OF MATHS & PHYS SCI
	VR LAMB	UNIV OF NORTH CAROLINA	SCH OF MATHS & PHYS SCI
	RE BRITTER	UNIV OF NORTH CAROLINA	SCH OF MATHS & PHYS SCI
MILESTONES,..:	09/78 -PROGRESS REPORT		
	09/79 -PROGRESS REPORT		
	09/80 -FINAL REPORT		
PLAN ID,.....:	(AP=603A)(DU=A125) ATMOSPHERIC PROCESSES AND EFFECTS		
ORDIS CODES,.:	RECN=001767	SSIE=GMA 4476 1	EPA =R805595-02 TASK=G603A-AH-34
	AP =603A	DU =A125	LABT=ALW
PROJ STATUS,.:	PROJECT=ACTIVE	DATA=ORIGINAL	CATEGORY= UNKN

ABSTRACT,....: WE PROPOSE TO CONTINUE OUR PHYSICAL MODELING STUDIES OF FLOWS OVER AND AROUND HILLS AND BUILDINGS AS WELL AS OF THE DISPERSION OF POLLUTANTS IN SUCH COMPLEX FLOWS. THE EXPERIMENTS WILL BE CONDUCTED IN EPA'S METEOROLOGICAL WIND TUNNEL AND STRATIFIED TOWING TANK FACILITIES LOCATED IN RESEARCH TRIANGLE PARK. AN IMPORTANT OBJECTIVE OF THESE LABORATORY EXPERIMENTS IS TO PROVIDE A SOUND DATA BASE FOR TESTING EXISTING THEORIES OF FLOW OVER TOPOGRAPHY AND DEVELOPING BETTER ONES. ONLY A GOOD THEORY CAN PROVIDE A REASONABLE BASIS FOR EXTRAPOLATING LABORATORY MODEL RESULTS FOR ATMOSPHERIC APPLICATIONS. THEREFORE, WE ALSO PROPOSE TO EXPEND CONSIDERABLE EFFORT IN THEORETICAL AND NUMERICAL MODELING OF ATMOSPHERIC FLOWS AND DIFFUSION OVER COMPLEX TERRAIN. A GOOD PART OF THIS WILL INVOLVE NUMERICAL MODELING OF MESO- AND LARGE-SCALE FLOWS OVER AND AROUND CERTAIN ISOLATED TOPOGRAPHICAL FEATURES WITH THE EARTH'S ROTATIONAL EFFECTS INCLUDED.

**PROJECT: 00553-FATE AND EFFECTS OF SEDIMENTS FROM COMBINED SEWER AND STORM DRAIN OVERFLOW IN SEATTLE NEARSHORE WATERS

STARTING/ COMPLETION DATE : 10/77 - 03/79 : FUNDING : ESTIMATED - FY78 / $ 26538
TASK CODE=C611A-7107 **EPA=R805602-01 ** (GRANT) PRIOR FY77 / $ 130000

EPA OFFICER.: JN ENGLISH EPA/MERL - CINC
INVESTIGATOR.: GD FARRIS METRO MUN OF SEATTLE
R DOMENOWSKE METRO MUN OF SEATTLE
MILESTONES...: 09/79 -FINAL REPORT PUBLISHED
PLAN ID.....: (AP-611A)(DU-8106) URBAN RUNOFF POLLUTION CONTROL
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
CURR. RESULTS: BOTTOM AREAS IN LAKE WASHINGTON 7 ELLIOT BAYTHAT AR 0012
AFFECTED BY SED. DISCHARGES HAVE BEEN DEFINED AND S 0012
OF BENTHIC ORGANISMS, MUSSELS AND OYSTERS HAVE BEEN 0012
FOR ANALYSIS AND COMPARISON. 0012
ORDIS CODES..: RECN-000553 SSIE-GMA 4025 1 EPA -R805602-01 TASK-C611A-7107
ORD -RC10830-1078 LABN-C611A-0009 MAND-10-01
AP -611A DU -8106 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVE/APPROACH: 1. DETERMINE THE DISTRIBUTION PATTERNS AND FATE OF SUSPENDED PARTICULATES EMANATING FROM REPRESENTATIVE COMBINED SEWER OVERFLOWS AND STORM DRAINS IN THE SEATTLE AREA. DETERMINE SEASONAL DIFFERENCES AND CORRELATE QUANTITATIVE IN-SITE OBSERVATIONS WITH SUSPENDED SOLIDS LOADING FACTORS AND CURRENT PATTERNS. 2. DETERMINE THE EFFECTS OF THE SETTLED PARTICULATES AND ASSOCIATED CONTAMINANTS ON THE POPULATION DISTRIBUTIONS OF BENTHIC ORGANISMS. 3. ASSESS THE AREAWIDE DISTRIBUTION OF THE PARTICULATE CONTAMINANTS. 4. MEASURE VIRUS IN OVERFLOWS, RECEIVING WATERS, AND SEDIMENTS. FINAL OUTPUT: FINAL REPORT CONTAINING THE ABOVE DESCRIBED INFORMATION. RESULTS TO DATE: BOTTOM AREAS IN LAKE WASHINGTON AND ELLIOT BAY THAT ARE AFFECTED BY COMBINED AND STORM SEWER SEDIMENT DISCHARGES HAVE BEEN DEFINED AND SAMPLES OF BENTHIC ORGANISMS, MUSSELS, AND OYSTERS HAVE BEEN TAKEN FOR ANALYSIS AND COMPARISON WITH THOSE FROM CONTROL AREAS.

**PROJECT: 00719-DATA BASE LOCATION & EVALUATION FOR HEAVY METALS DISCHARGE INTO
MUNICIPAL WASTEWATER COLLECTION AND TREATMENT SYSTEMS
STARTING/ COMPLETION DATE : 10/77 - 08/79 : FUNDING : ESTIMATED - FY78 / $ 93975
TASK CODE=C6118-7220 **EPA=R805606-01 ** (GRANT) PRIOR FY77 / $ 48813

EPA OFFICER,: SA HANNAH EPA/MERL - CINC
INVESTIGATOR,: RA MINEAR UNIV OF TENNESSEE CIV ENG DEPT
RA BALL UNIV OF TENNESSEE CIV ENG DEPT
MILESTONES,..: 07/78 -INTERIM REPORT ON AVAILABILITY OF DATA SOURCES
07/79 -FINAL REPORT WITH EVALUATION OF COLLECTED DATA
PLAN ID.....: (AP-6118)(DU-R106) WASTEWATER TREATMENT TECHNOLOGY PROGRAMS
MANDATE.....: 10-03 TOXIC SUBSTANCES CONTROL ACT
CURR. RESULTS: STATE AND EPA SURVEYS COMPLETED EXCEPT HAWAII, 47% 0015
THEY HAVE POTENTIALLY USEFUL METALS DATA AT LOCAL L 0015
ORDIS CODES..: RECN-000719 SSIE-GMA 4573 1 EPA -R805606-01 TASK-C6118-7220
ORD -RC10830-1078 MAND-10-03 AP -6118
DU -R106 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVES/APPROACH: TO LOCATE, SURVEY, TABULATE AND GENERALLY EVALUATE THE DATA BASES AVAILABLE THAT RELATE TO ASSESSMENT OF RELATIVE SOURCE CONTRIBUTION OF HEAVY METALS TO PUBLICLY OWNED WASTEWATER TREATMENT SYSTEMS. THE PROJECT WILL BE CONDUCTED IN TWO PHASES. PHASE I WILL BE DIRECTED AT AN INTENSIVE AND COMPREHENSIVE SEARCH FOR DATA BASES RESULTING IN TABULATION ACCORDING TO GEOGRAPHICAL LOCATION, POPULATION AND INDUSTRIALIZATION CLASSIFICATION AND EXPRESSED IN TERMS OF EXTENT OF DATA BASE EXISTENCE. PHASE II WILL BE DIRECTED AT QUALIFICATION OF DATA BASE USEFULNESS IN TERMS OF INCLUSIVENESS, QUANTITY OF DATA, QUALITY OF DATA AND ABILITY TO ASSESS TOTAL METAL DYNAMICS IN A GIVEN SYSTEM. OUTPUTS: PHASE I - INTERIM REPORT ON AVAILABILITY OF DATA SOURCES AND A QUALITATIVE EVALUATION OF USEFULNESS, PHASE II - FINAL REPORT WITH A QUANTITATIVE EVALUATION OF THE DATA BASES LOCATED IN PHASE I. RESULTS TO DATE: STATE AND EPA REGIONAL OFFICE SURVEYS HAVE BEEN COMPLETED EXCEPT FOR HAWAII WHICH HAS NOT RESPONDED. DATA FROM THESE SOURCES RANGE FROM LITTLE TO EXTENSIVE DEPENDING ON THE PARTICULAR STATES. DIRECT CONTACTS HAVE BEEN MADE WITH 431 CITIES, REPRESENTING 49 PERCENT OF THOSE CITIES IDENTIFIED FOR CONTACT (I.E., POPULATION GREATER THAN OR EQUAL TO 25,000). OF THOSE CITIES CONTACTED, 47 PERCENT HAVE INDICATED THAT THEY HAVE POTENTIALLY USEFUL METALS DATA AT THE LOCAL LEVEL.

**PROJECT: 00504-COFIRING OF SOLID WASTE IN A CEMENT KILN

STARTING/ COMPLETION DATE : 10/77 - 12/78 : FUNDING : ESTIMATED - FY78 / $ 13000
TASK CODE=86248-626 **EPA=R805613-01 ** (GRANT) PRIOR FY77 / $ 200000

EPA OFFICER,: RA OLEXSEY EPA/IERL - CINC
INVESTIGATOR,: CR MILLEY STATE ENV SERV
RH HERRMANN STATE ENV SERV
JR BERRY STATE ENV SERV
CS WEINBERGER STATE ENV SERV
MILESTONES,..: 12/78 -FINAL REPORT RECEIVED
PLAN ID.....: (AP=6248)(DU=L110) ENVIRONMENTAL ASPECTS OF ENERGY CONSERVATION/ADVANCED ENERGY
MANDATE.....: 10-99 -NUCLEAR ENERGY) PL 93-577, (RCRA) PL 94-580 0011
10-05 RESOURCE CONSERVATION AND RECOVERY ACT
20-14 DAA FOR SOLID WASTE
ORDIS CODES,.: REGN=000504 SSIE=ZZ 425 EPA =R805613-01 TASK=86248-626
ORD =RB10C30-5078 MAND=10-99 MAND=10-05
MAND=20-14 AP =6248 DU =L110 LABT=EMI

PROJ STATUS,.: PROJECT=ACTIVE DATA=ORIGINAL CATEGORY=RESEARCH
ABSTRACT.....: THE OBJECTIVES OF THIS PROJECT ARE TO: 1. DEMONSTRATE THE ABILITY TO BURN REFUSE DERIVED FUEL (RDF) IN A CEMENT KILN AND DETERMINE THE EFFECT ON: A. CEMENT QUALITY; B. ECONOMICS; C. KILN OPERATION AND MAINTENANCE; D. EMISSIONS. 2. ESTABLISH BROAD RDF SPECIFICATIONS, BURN RATES, AND QUALITY-CONTROL PROCEDURES FOR BURNING IN CEMENT KILNS. THE APPROACH WILL BE A SIX MONTH TEST BURN OF RDF AT RDF FIRING RATES EQUIVALENT TO 10%, 20%, AND 30% OF THE HEATING VALUE OF COAL. A TOTAL OF 3000 TONS OF RDF WILL BE COMBUSTED OVER THE SPAN OF TESTING. PHYSICAL AND CHEMICAL ANALYSIS WILL BE CONDUCTED ON THE RDF, RDF ASH, COAL, CLINKER, CEMENT PRODUCT, AND FLY ASH. AN ECONOMIC ANALYSIS OF THE COST BENEFIT OF THE RDF COMBUSTION WILL BE PERFORMED.

**PROJECT: 00880-REFUSE DERIVED FUEL AS A SUPPLEMENTAL FUEL IN CEMENT KILNS (MODIFIED JUNE 1978)
STARTING/ COMPLETION DATE : 10/77 - 02/79 : FUNDING : ESTIMATED - FY78 / $ 135000
TASK CODE=C618A-118 **EPA=R805613-01 ** (GRANT) PRIOR FY77 / $ 199548

EPA OFFICER.: DA OBERACKER EPA/MERL - CINC
INVESTIGATOR.: CR WILLEY STATE ENV SERV
RH HERRMANN STATE ENV SERV
JR BERRY STATE ENV SERV
CS WEINBERGER STATE ENV SERV
MILESTONES...: 07/78 -AWARD SHWRD SUPPLEMENT TO STUDY WASTE SHREDDING/TROMMELLING
12/78 -COMPLETE SHWRD STUDIES (IERL STUDIES RUN INDEPENDENTLY)
02/79 -EPA-SHWRD FINAL REPORT ON OPTIMIZED METHODS FOR PRODUCING RDF
PLAN ID.....: (AP-618A)(DU-D110) SOLID & HAZARDOUS WASTE MANAGEMENT
MANDATE.....: 10-05 RESOURCE CONSERVATION AND RECOVERY ACT
30-99 E PROCESSING 0019
ORDIS CODES..: RECN-000880 SSIE-GMA 5101 EPA -R805613-01 TASK-C618A-118
ORD -RC10830-5078 MAND-10-05 MAND-30-99
AP -618A DU -D110 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
COMMENT.....: SHWRD'S SUPPLEMENT/AMMENDMENT WILL ASSIST IERL IN D 0019
SUFFICIENT QUANTITIES/QUALITY OF RDF TO MAKE CEMENT 0019
FIRING TESTS SUCCESSFUL WHILE FULFILLING SHWRD SHRE 0019
TROMMELLING PROCESSING OBJECTIVES. 0019

ABSTRACT.....: THE OBJECTIVES OF THIS PROJECT ARE TO: 1. DEMONSTRATE THE ABILITY TO BURN REFUSE DERIVED FUEL (RDF) IN A CEMENT KILN AND DETERMINE THE EFFECT ON: A. CEMENT QUALITY; B. ECONOMICS; C. KILN OPERATIONS AND MAINTENANCE; D. EMISSIONS. 2. ESTABLISH BROAD RDF SPECIFICATIONS, BURN RATES, AND QUALITY-CONTROL PROCEDURES FOR BURNING IN CEMENT KILNS. THE APPROACH WILL BE A SIX-MONTH TEST BURN OF RDF FIRING RATES EQUIVALENT TO 10 PERCENT, 20 PERCENT AND 30 PERCENT OF THE HEATING VALUE OF COAL. A TOTAL OF 3000 TONS OF RDF WILL BE COMBUSTED OVER THE SPAN OF TESTING. PHYSICAL AND CHEMICAL ANALYSIS WILL BE CONDUCTED ON THE RDF, RDF ASH, COAL, CLINKER, CEMENT PRODUCT, AND FLY ASH. AN ECONOMIC ANALYSIS OF THE COST BENEFIT OF THE RDF COMBUSTION WILL BE PERFORMED. IN ADDITION, AS OF JUNE 1978, TASKS WERE ADDED TO THE GRANT BY EPA-MERL/SHWRD TO STUDY THE SOLID WASTE PROCESSING ASPECTS OF RDF FOR CEMENT KILNS IN GREATER DETAIL. THIS AREA INCLUDES DETERMINING METHODS FOR INCREASING MATERIAL THROUGHPUT FROM AVAILABLE PROCESSING LINES BY OPTIMAL SEQUENCING AND/OR ADDITIONS OF SHREDDERS, TROMMELS, CONVEYORS AND OTHER UNIT OPERATIONS. RELIABLE PRODUCTION OF SUITABLE RDF AT PARTICLE SIZES OF 1/2 INCH OR LESS AT RATES OF UP TO 10 TONS/HR FROM THE EXISTING EQUIPMENT WILL REQUIRE ADDITIONAL RESEARCH STUDIES WHICH SHOULD YIELD NEW PROCESSING INFORMATION APPLICABLE IN MANY OTHER FIELDS.

**PROJECT: 03984-IDENTIFICATION OF TOXIC POLLUTANT DISCHARGES FOR UNIT PROCESSES

STARTING/ COMPLETION DATE : 10/77 - 01/81 : FUNDING : ESTIMATED - FY78 / $ 50000
TASK CODE=V610 -01 **EPA=R805620 ** (GRANT) PRIOR FY /

EPA OFFICER,: PE DESROSIERS EPA/HQQTRS- OEMI
INVESTIGATOR,: JA KING MITRE CORP
E HERRICK MITRE CORP
MILESTONES...: 02/78 -TOXIC POLLUTANT ID,: TRIFLURALIN MANUFACTURING 02/78-01
02/78 -TOXIC POLLUTANT ID,: ATRAZINE MANUFACTURING 02/78-02
02/78 -TOXIC POLLUTANT ID,: ACRYLONITRILE MANUFACTURING 02/78-03
11/78 -TOXIC POLLUTANT ID,: NITROBENZENE/ANILINE MANUFACTURING
11/78 -TOXIC POLLUTANT ID,: AMINATION PROCESSES
02/79 -TOXIC POLLUTANT ID,: ALKYL AND ALKYNOL AMINES MFG,
PLAN ID.....: (AP=610)(DU=B118) MINERALS PROCESSING AND MANUFACTURING INDUSTRIES
MANDATE.....: 20-30 AA FOR TOXIC SUBSTANCES
ORDIS CODES..: RECN=003984 SSIE=GMA 4865 1 EPA =R805620 TASK=V610 -01
ORD =RV10830-2078 LABN=V604 -02 MAND=20-30
AP =610 DU =B118 LABT=EMI

PROJ STATUS..: PROJECT=ACTIVE DATA=ORIGINAL CATEGORY=RESEARCH
ABSTRACT.....: CHARACTERIZATION OF TOXIC DISCHARGES AND FEEDSTOCK, INTERMEDIATE, AND PRODUCT CONTAMINANTS FOR REPRESENTATIVE CHEMICAL MANUFACTURING OPERATIONS WHICH UTILIZE THE MAJOR UNIT PROCESSES, AND ASSESSMENT OF NEW CONTROL TECHNOLOGIES AND IN-PLANT MODIFICATIONS TO OBVIATE THEIR DISC

**PROJECT: 02711-BIOLOGICAL ASSESSMENT OF EXPOSURE TO SULFUR DIOXIDE AND ACID SULFATE

STARTING/ COMPLETION DATE : 06/77 - 10/80 : FUNDING : ESTIMATED - FY78 / $ 90795
TASK CODE=H625F-7187 **EPA=R805622-01 ** (GRANT) PRIOR FY77 / $ 105000

EPA OFFICER,: CG HAYES EPA/HERL - RTP
INVESTIGATOR,: KV RAJAGOPALAN DUKE UNIV SCH OF ME/PHARM DEPT
MILESTONES...: 12/78 -ANNUAL REPORT
12/79 -ANNUAL REPORT
12/80 -ANNUAL REPORT
PLAN ID.....: (AP=625F)(DU=N140) AIR, WATER AND MULTI-ROUTE EXPOSURE & THEIR EFFECTS (HEALTH)
MANDATE.....: 30-99 EMIOLOGY & TOXICOLOGY 0013
ORDIS CODES..: RECN=002711 SSIE=GMA 4328 1 EPA =R805622-01 TASK=H625F-7187
ORD =RH10830-3078 LABN=H625F-8187 MAND=30-99
AP =625F DU =N140 LABT=HEE

PROJ STATUS..: PROJECT=ACTIVE DATA=ORIGINAL CATEGORY=RESEARCH
ABSTRACT.....: THE USE OF HIGH-SULFUR COAL AS A SOURCE OF ENERGY IS EXPECTED TO GENERATE HIGHER ATMOSPHERIC CONCENTRATIONS OF SULFUR DIOXIDE AND ACID SULFATE. IT IS GENERALLY BELIEVED THAT THESE COMPOUNDS COULD AFFECT THE HEALTH OF HUMAN POPULATIONS WHICH MAY BE EXPOSED TO THEM. BECAUSE OF THIS, IT IS OF ADVANTAGE TO HAVE AVAILABLE RELIABLE BIOLOGICAL INDICES FOR DETECTION OF EXPOSURE TO THESE CHEMICALS. THE RELEVANT TESTS SHOULD BE APPLICABLE TO BLOOD SAMPLES OBTAINED FROM SAMPLES OF HUMAN POPULATION. IN THE CASE OF SULFUR DIOXIDE, IT IS CONCEIVABLE THAT METABOLITES SUCH AS SULFITE, THIO-SULFATE AND S-SULFOCYSTEINE MAY BE PRESENT IN THE BLOOD OF EXPOSED INDIVIDUALS IN CONCENTRATIONS HIGHER THAN THOSE IN NORMAL POPULATIONS. USING THE RAT AS THE EXPERIMENTAL ANIMAL, THIS PROJECT WILL EXPLORE THE POSSIBILITY OF DEVELOPING SENSITIVE TESTS FOR THE PRESENCE OF THESE COMPOUNDS IN BLOOD OF ANIMALS EXPOSED TO VARIOUS LEVELS OF SO2. PROCEDURES FOR ASSESSING EXPOSURE TO ACID SULFATE MAY ALSO BE POSSIBLE TO DEVELOP. SINCE SULFITE OXIDASE IS AN ENZYME CAPABLE OF DETOXIFYING SO2, METHODS FOR EPIDEMIOLOGICAL TESTING OF SULFITE OXIDASE IN HUMAN POPULATIONS WILL ALSO BE INVESTIGATED.

**PROJECT: 00299-NEUTRALIZATION/PRECIPITATION MANUAL OF PRACTICE

STARTING/ COMPLETION DATE : 09/77 - 10/79 : FUNDING : ESTIMATED - FY78 / $ 110000
TASK CODE=B610C-593 **EPA=R805623-01 ** (GRANT) PRIOR FY /

EPA OFFICER,: GF WEESNER EPA/IERL - CINC
INVESTIGATOR,: P CLIFFORD MITRE CORP
MILESTONES...: 10/78 -FINAL REPORT PUBLISHED IN FORM OF DESIGN MANUAL
PLAN ID.....: (AP-610C)(DU-B118) MATERIALS PRODUCTION, INDUSTRIAL PT. SOURCES (WATER)
FINAL OUTPUT,: DESIGN MANUAL 0007
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-000299 SSIE-ZZ 438 EPA -R805623-01 TASK-B610C-593
ORD -RB10C30-1078 MAND-10-01 AP -610C
DU -B118 LABT-EMI

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE PRIMARY EMPHASIS OF THIS MANUAL WILL BE ONE OF REMOVAL OF HEAVY METALS FROM WASTEWATER COMMONLY ASSOCIATED WITH ELECTROPLATING/METAL FINISHING INDUSTRIES. SINCE DATA WILL BE COLLECTED FROM ALL CORNERS OF THE INORGANIC AND METALS INDUSTRY, IT IS FELT THAT THE MOP WILL BE WIDELY APPLICABLE TO THESE AREAS AS WELL. MITRE'S APPROACH WILL BE ONE OF UNIT OPERATION/UNIT PROCESS OPTIMIZATION OF DESIGN CRITERIA, SELECTION, AND OPERATIONS-MAINTENANCE FOR USE UNDER WORLD CONDITIONS. GENERAL AREAS TO BE COVERED INCLUDE: THEORY, DESIGN AND UPGRADING, OPERATION AND EQUIPMENT, COSTING AND ECONOMICS, CASE HISTORIES AND APPLICATIONS, AND BIBLIOGRAPHY. THE PRIMARY USERS TOWARD WHICH THE MANUAL WILL BE ORIENTED ARE INDUSTRIAL OPERATIONS WITH HEAVY METAL POLLUTION PROBLEMS, AND REGULATORY AGENCIES HAVING THE NEED TO DEAL WITH SUCH OPERATIONS. THE MANUAL SHOULD BE USEFUL TO ANYONE NEEDING AN ORGANIZED, PRACTICALLY ORIENTED PRESENTATION OF THE CURRENT STATE-OF-THE-ART.

360

**PROJECT: 00717-ENVIRONMENTAL CHANGES & AGRICULTURAL BENEFITS RESULTING FROM UTILIZATION OF MUNICIPAL SEWAGE SLUDGE IN THE PRODUCTION OF CROPS (ABBR
STARTING/ COMPLETION DATE : 10/77 - 10/80 : FUNDING : ESTIMATED - FY78 / $ 193911
TASK CODE=C6118-7219 **EPA=R805629-01 ** (GRANT) PRIOR FY77 / $ 150000

EPA OFFICER,: GK DUTSON EPA/MERL - CINC
INVESTIGATOR,: CL MING METRO SAN DIST OF CHICAGO
D ZENY METRO SAN DIST OF CHICAGO
JR PETERSON METRO SAN DIST OF CHICAGO
RI PIETZ METRO SAN DIST OF CHICAGO
MILESTONES...: 02/81 -FINAL REPORT PUBLISHED
PLAN ID.....: (AP-6118)(DU-B106) WASTEWATER TREATMENT TECHNOLOGY PROGRAMS
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-000717 SSIE-GMA 4574 1 EPA -R805629-01 TASK-C6118-7219
URD -RC10B30-1078 MAND-10-01 AP -6118
DU -B106 LABT-ALM

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVE: THE GENERAL OBJECTIVES ARE TO COLLECT INFORMATION NEEDED TO DEVELOP METHODS FOR PREVENTING OR MINIMIZING ADVERSE EFFECTS ON SOILS, CROPS, WATER, AND ANIMALS, AND MAXIMIZING BENEFITS FROM USING SEWAGE SLUDGE AS A FERTILIZER AND SOIL CONDITIONER. APPROACH: FIELD PLOTS AND LYSIMETER PLOTS WITH THREE SOIL TYPES AND STRIP-MINED SOIL WILL RECEIVE LIQUID DIGESTED SLUDGE APPLICATIONS AT VARYING RATES (0, 1/4, 1/2 AND MAXIMUM). SOME PLOTS HAVE RECEIVED ANNUAL SLUDGE APPLICATIONS FOR NINE (9) YEARS. MAXIMUM RATE IS EQUIVALENT TO ONE INCH PER WEEK FOR ABOUT SIX TO NINE WEEKS. THE EFFECT OF SLUDGE COMPONENTS ON SOIL, WATER AND CROPS WILL BE DETERMINED BY REGULAR SAMPLING AND ANALYSIS. CORN AND SOYBEANS PRODUCED ON SLUDGE TREATED SOILS WILL BE FED TO LAYING HENS. THE EFFECT ON THE HEALTH, COMPOSITION AND PRODUCTION OF THE HENS WILL BE MEASURED OVER A PERIOD OF 80 WEEKS. CADMIUM ACCUMULATION IN THE HENS AND EGGS WILL BE DETERMINED. A SINGLE APPLICATION OF DEWATERED SLUDGE AT HIGH RATE ON FIELD PLOTS ON STRIP-MINED SOILS WILL BE COMPARED TO INCREMENTAL LIQUID SLUDGE APPLICATIONS ANNUALLY.

**PROJECT: 00867-SOLID WASTE REDUCTION AND MASS MEDIA CAMPAIGNS

STARTING/ COMPLETION DATE : 11/77 - 01/79 : FUNDING : ESTIMATED - FY78 / $ 13729
TASK CODE=C618A-102 **EPA=R805635-01 ** (GRANT) PRIOR FY77 / $ 98716

EPA OFFICER.: HC GODDARD EPA/MERL - CINC
INVESTIGATOR.: WL RATHJE UNIV OF ARIZONA SCH OF LIBERAL ARTS
MILESTONES...: 06/78 -INFORMATION CAMPAIGN START
01/77 -DRAFT FINAL REPORT
PLAN ID.....: (AP=618A)(OU=0110) SOLID & HAZARDOUS WASTE MANAGEMENT
MANDATE.....: 30-99 MICS-MARKETING 0018
ORDIS CODES..: RECN-000867 SSIE-ZZ 356 EPA -R805635-01 TASK-C618A-102
ORD -RC10020-3078 MAND-30-99 AP -618A
OU -0110 LABT-ALM

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE GARBAGE PROJECT HAS BEEN CONDUCTING RESEARCH ON HOUSEHOLD-LEVEL DISCARDS SINCE 1973 AND TO DATE HAS ANALYZED MORE THAN 2000 GARBAGE SAMPLES. THE PURPOSE OF THE PROJECT'S RESEARCH IS TO RELATE CONSUMPTION AND DISCARD PATTERNS, AS REPRESENTED IN HOUSEHOLD RESIDUALS, TO SOCIOECONOMIC VARIABLES. IN 1977-78 THE PROJECT WILL FOCUS UPON THE DISCARD OF NEWSPAPERS AND SOFT DRINK CONTAINERS IN AN EFFORT TO MONITOR ANY CHANGES IN THE FREQUENCY OR VOLUME OF THESE DISCARDS DURING A TIME PERIOD IN WHICH THE CITY OF TUCSON WILL BE CONDUCTING MASS MEDIA CAMPAIGNS DESIGNED TO ENCOURAGE SOURCE SEPARATION OF NEWSPAPERS AND SOURCE REDUCTION OF SOFT DRINK CONTAINERS. THE RESULTS OF THIS MONITORING PROCESS SHOULD YIELD INFORMATION ABOUT THE FEASIBILITY OF USING MEDIA CAMPAIGNS TO PROMOTE REDUCTION OF RESIDENTIAL SOLID WASTES. IN ADDITION, THE PROJECT WILL CONTINUE ITS LONGITUDINAL SAMPLE OF BOTH FOOD AND NON-FOOD DISCARDS AND A STUDY OF HAZARDOUS WASTES IN THE RESIDENTIAL SOLID WASTE STREAM WILL BE CONDUCTED.

3622

**PROJECT: 00806-EVALUATION OF NATURAL INHIBITING FACTORS IN AN AGGRESSIVE WATER

STARTING/ COMPLETION DATE : 10/77 - 11/79 : FUNDING : ESTIMATED - FY78 / $ 24318
TASK CODE=C614A-7137 **EPA=R805638-02 ** (GRANT) PRIOR FY77 / $ 31386

EPA OFFICER.: RW RUELOW EPA/MERL - CINC
INVESTIGATOR.: DT ZAJICEK UNIV OF MASSACHUSETTS SCH OF ENG/DEPT OF CIV ENG
EJ LAMOTTA UNIV OF MASSACHUSETTS SCH OF ENG/DEPT OF CIV ENG
BB BERGER UNIV OF MASSACHUSETTS SCH OF ENG/DEPT OF CIV ENG

MILESTONES...: 11/79 -FINAL REPORT PUBLISHED
PLAN ID.....: (AP=614A)(DU=C110) WATER SUPPLY - WATER TREATMENT & SYSTEMS
MANDATE.....: 10-13 SOLID WASTE DISPOSAL ACT
CURR. RESULTS: INITIAL CALCIUM CONCENTRATION IN WATER IS OF MORE 0017
IMPORTANCE THAN PH OR CO2 IN DEGREE OF WATER CORROS 0017

ORDIS CODES..: RECN-000806 SSIE-ZZ 353 EPA -R805638-02 TASK-C614A-7137
ORD -RC10C30-1078 LABN-C614A-0058 MAND-10-13
AP -614A DU -C110 LABT-ALA

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH

ABSTRACT.....: THE PROJECT WILL EXAMINE THE NATURE OF WATER AGGRESSIVENESS AND WILL FOCUS ON A COMMUNITY WATER SUPPLY WHICH PRESENTS AN ANOMALY - AN AGGRESSIVE WATER, BUT LITTLE EVIDENCE OF AGGRESSIVENESS. THIS OBSERVATION HAS RAISED QUESTIONS CONCERNING THE VALIDITY OF CONVENTIONAL INDICES OF AGGRESSION. THE PROJECT PROPOSES TO EXAMINE THE RESPONSE OF ASBESTOS-CEMENT AND CAST IRON PIPE SPECIMENS TO A WIDE RANGE OF CONDITIONS THAT INFLUENCE THE AGGRESSIVE NATURE OF WATER. THE VARIABLES TO BE EXAMINED IN THE LABORATORY WILL INCLUDE PH, ALKALINITY, HARDNESS, DISSOLVED OXYGEN, IRON, MANGANESE, ZINC, SILICA, AMMONIA, NITRATE, CHLORIDE AND ORGANIC SUBSTANCES OF NATURAL ORIGIN. SIMULTANEOUSLY, A HYDRAULIC-CHEMICAL MODEL WILL BE DEVELOPED AND FIELD-VALIDATED FOR PREDICTING THE CHEMICAL CHARACTER OF WATER AT ANY POINT IN THE DISTRIBUTION SYSTEM. THE RESULTS OF THE LABORATORY TESTS WILL BE MATCHED WITH COMPOSITION PROFILES OF WATER IN THE DISTRIBUTION SYSTEM PRODUCED BY THE MODEL TO PROVIDE AN IMPROVED UNDERSTANDING OF THE CONDITIONS APPLICABLE TO AGGRESSIVENESS, AND AN IMPROVED METHOD OF PREDICTING RATE AND DEGREE OF AGGRESSIVENESS FOR A GIVEN WATER. EARLY RESULTS INDICATE THAT THE INITIAL CALCIUM CONCENTRATION IN THE WATER IS OF MORE IMPORTANCE THAN PH OR CO2 IN THE DEGREE OF WATER CORROSIVITY.

**PROJECT: 02621-RAPID FIELD MEASUREMENTS OF ORGANOPHOSPHORUS PESTICIDE RESIDUES

STARTING/ COMPLETION DATE : 08/78 - 08/79 : FUNDING : ESTIMATED - FY78 / $ 51793
TASK CODE=H615A-8641 **EPA=R805642-01 ** (GRANT) PRIOR FY /

EPA OFFICER,: R BARON EPA/HERL - RTP
INVESTIGATOR,: FA GUNTHER UNIV OF CALIFORNIA COLL OF NAT & AGRIC SCI
CA SMITH UNIV OF CALIFORNIA COLL OF NAT & AGRIC SCI
MILESTONES...: 01/79 -DEVELOP FIELD TEST KIT
07/79 -VALIDATE FIELD KIT
PLAN ID.....: (AP-615A)(DU-E105) MULTI-ROUTE EXPOSURES: HEALTH IMPLICATIONS OF PESTICIDES
MANDATE.....: 20-34 DAA FOR PESTICIDE PROGRAMS
ORDIS CODES..: RECN-002621 SSIE-GMA 5477 EPA -R805642-01 TASK-H615A-8641
ORD -RH10830-2078 MAND-20-34 AP -615A
DU -E105 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: WIDE VARIATIONS EXIST IN THE DISSIPATION RATES OF ORGANOSPHOSPHATE PESTICIDE RESIDUES AND THEIR DEGRADATION PRODUCTS ON FOLIAGE, FRUITS, AND SOIL. THIS CAN RESULT IN EXCESSIVE EXPOSURE OF AGRICULTURAL WORKERS TO THESE RESIDUES UPON ENTERING THE TREATED GROVES TO PICK FRUIT. CURRENT ANALYTICAL METHODS, WHOLE PRECISE AND SENSITIVE, ARE NEITHER PORTABLE NOR RAPID. IT IS PROPOSED TO DEVELOP AN ANALYSIS KIT FOR THE MEASUREMENT OF PESTICIDE RESIDUES WHICH WILL BE PORTABLE AND GIVE RAPID RESULTS, THUS ALLOWING POTENTIAL RESIDUE HAZARDS TO BE IDENTIFIED PRIOR TO WORKER ENTRY INTO TREATED AREAS. THIS KIT WILL ENABLE REGULATORY AGENCIES TO ESTABLISH LIMITS FOR RESIDUES, AND TO MONITOR FIELDS AND GROVES TO ASSURE COMPLIANCE WITH THESE LIMITS. THE PROPOSED KIT WILL MEASURE DISLOGABLE RESIDUES ON FOLIAGE, AS WELL AS SLOUGHED AND RUNOFF RESIDUES IN THAT PORTION OF SOIL WHICH IS MOST FINELY DIVIDED AND THUS MOST LIKELY TO BECOME AIRBORNE BY PICKER ACTIVITY; THESE TWO SOURCES ARE BELIEVED TO BE THE MOST IMPORTANT SOURCES OF TOXICANTS TO WORKERS. IN addition, THE PROPOSED KIT SHOULD ALSO BE OF VALUE IN IMPROVING PESTMANAGEMENT TECHNIQUES, BY ALLOWING RAPID DETERMINATION OF SURFACE RESIDUES SO THAT THE EFFECTS ON PEST INSECTS AND THEIR NATURAL ENEMIES CAN BE PREDICTED.

**PROJECT: 01122-THE CLINICAL PHARMACOLOGY AND TOXICOLOGY OF CHLORINE DIOXIDE AND ITS PRODUCTS (ABBREV)
STARTING/ COMPLETION DATE : 00/78 - UNK : FUNDING : ESTIMATED - FY78 / $ 0
TASK CODE=D614B-014 **EPA=R805643-01 ** (GRANT) PRIOR FY /

EPA OFFICER,: P HEFFERNAN EPA/HERL - CINC
INVESTIGATOR,: JR BIANCHINE OHIO STATE UNIV COLL OF MED
D COURI OHIO STATE UNIV COLL OF MED
MILESTONES...: 12/78 -DETERMINE TOLERANCE AND SAFETY OF SINGLE RISING DOSES OF DISINFEC TANTS
06/79 -ESTABLISH KINETICS OF CHLORINE DIOXIDE ABSORPTION, DISTRIBUTION A ND REACTION
09/79 -DETERMINE TOLERANCE AND SAFETY OF 3 MONTH EXPOSURE TO DISINFECTAN TS
06/80 -HAZ, ASSESS OF DISINF, TO ANIMALS WITH FE DEFICIENT ANEMIA
PLAN ID.....: (AP=614B)(DU=C110) WATER SUPPLY - HEALTH EFFECTS RESEARCH
MANDATE.....: 10-13 SOLID WASTE DISPOSAL ACT
ORDIS CODES..: RECN=001122 SSIE-ZZ 728 EPA -R805643-01 TASK-D614B-014
ORD -RD10C30-1078 MAND-10-13 AP -614B
DU -C110 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THREE COMPONENTS OF THIS STUDY INCLUDE DEVELOPMENT OF A MORE SENSITIVE ASSAY FOR CHLORINE DIOXIDE IN BIOLOGIC TISSUE, AN EVALUATION OF THE TOXICITY OF CHLORINE DIOXIDE AND ITS REDUCTION PROJECTS IN ANEMIC RATS, AND AN EVALUATION OF THE SAFETY AND TOLERANCE OF CHLORINE DIOXIDE AND ITS REDUCTION PRODUCTS IN NORMAL, HEALTHY VOLUNTEERS. STUDIES IN NORMAL, HEALTHY VOLUNTEERS WILL BEGIN WITH AN ACUTE DOSE RANGING EXPERIMENT FOLLOWED BY A THREE MONTH CHRONIC DOSING STUDY. WE ANTICIPATE THAT THE ABOVE STUDIES WILL BE COMPLETED WITHIN ONE YEAR, IF THESE STUDIES INDICATE THAT CHLORINE DIOXIDE IS SAFE IN NORMAL HEALTHY VOLUNTEERS DURING A 3 MONTH DOSING STUDY, WE THEN WILL CARRY OUT A YEAR'S CHRONIC TOLERANCE AND SAFETY STUDY OF CHLORINE DIOXIDE IN A GROUP OF NORMAL HUMAN VOLUNTEER SUBJECTS AND STABLE PATIENTS WHO MIGHT BE AT GREATER RISK FROM CHLORINE DIOXIDE IN THEIR DRINKING WATER. DURING THE SECOND YEAR, WE FULLY ANTICIPATE TO DEFINE THE KINETICS OF THE ABSORPTION, DISTRIBUTION AND EXCRETION OF CHLORINE DIUXIDE IN ANIMALS AND MAN.

**PROJECT: 03334-WATER HYACINTH WASTEWATER TREATMENT SYSTEM

STARTING/ COMPLETION DATE : 08/78 - 07/82 : FUNDING : ESTIMATED - FY78 / $ 271000
TASK CODE=L611C-61 **EPA=S805655-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: WR DUFFER EPA/ERL - ADA
INVESTIGATOR.: WJ FOX REEDY CREEK IMPRV DIST
MILESTONES...: 05/79 -CONSTRUCTION COMPLETE
08/79 -INITIAL HYACINTH CROP ESTABLISH
10/79 -PRELIMINARY TESTING COMPLETED
10/80 -COMPLETE TESTING UTILIZING SECONDARY EFFLUENT AS INPUT
10/81 -COMPLETE TESTING UTILIZING PRIMARY EFFLUENT AS INPUT
05/82 -COMPLETE HARVESTING AND NUTRIENT ADDITION EXPERIMENTS
07/82 -COMPLETE FINAL PROJECT REPORT EVALUATING DESIGN VARIABLES
PLAN ID.....: (AP=611C)(OU=B106) APPLICATION OF WASTEWATER TO LAND (SOIL TREATMENT SYSTEMS)
MANDATE.....: 30-99 RNATIVE WASTEWATER TREATMENT PROCESSES. 0034
ORDIS CODES..: RECN=003334 SSIE-ZZ 264 EPA -S805655-01 TASK-L611C-61
ORD -RL10C30-3078 MAND-30-99 AP -611C
OU -B106 LABT-ALM

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE PURPOSE OF THIS PROJECT IS TO DEMONSTRATE AN INNOVATIVE AND ENVIRONMENTALLY SOUND WATER HYACINTH WASTEWATER TREATMENT SYSTEM DESIGNED TO RECYCLE WATER AND NUTRIENTS. SPECIFIC GOALS: MEET TERTIARY EFFLUENT STANDARDS OF 5 MG/1 BIOCHEMICAL OXYGEN DEMAND (BOD) AND SUSPENDED SOLIDS (SS), 3 MG/1 NITROGEN (N), 1 MG/1 PHOSPHORUS (P); SECONDARY SYSTEM REMOVAL CAPABILITY OF 85% BOD AND 75% SS FROM PRIMARY SEWAGE. THE APPROACH IS TO OPERATE A 50,000 GPD WASTEWATER TREATMENT SYSTEM, MONITOR THE SYSTEM AND ALL RELATED ACTIVITIES AND DETERMINE THE CAPABILITY OF THE SYSTEM TO MEET THE ABOVE OBJECTIVES. PHASE I OF THE PLAN WILL DESIGN, CONSTRUCT, AND OPERATE THE SYSTEM FOR 18 MONTHS; MONITOR SYSTEM, ANALYZE EFFECTIVENESS AND PUBLISH PERIODIC REPORTS AND A FINAL PHASE I REPORT. AS A SEPARATE ACTIVITY, CONDUCT STUDIES TO DETERMINE (1) BIOMASS CHARACTERIZATION/GROWTH OPTIMIZATION OF THE WATER HYACINTH AND (2) THE ENERGY CONVERSION POTENTIAL OF THE HYACINTH THROUGH ANAEROBIC DIGESTION. PRELIMINARY DESIGN CRITERIA SHOULD BE DEVELOPED FOR WATER HYACINTH TREATMENT SYSTEMS RECEIVING MUNICIPAL WASTEWATER. DATA FROM THIS PROJECT ARE TO BE UTILIZED FOR DESIGN OF A 1.0 MGD TREATMENT FACILITY.

**PROJECT: 03576-ALASKA VILLAGE RESEARCH PROJECT - WAINWRIGHT

STARTING/ COMPLETION DATE : 10/77 - 10/78 : FUNDING : ESTIMATED - FY78 / $ 653000
TASK CODE=M6118-41 **EPA=R805661-01 ** (GRANT) PRIOR FY77 / $ 52319

EPA OFFICER.: MA MITCHELL EPA/ERL - CORVALLIS
INVESTIGATOR.: D BUDFISH WAINWRIGHT CITY GOVT
MILESTONES...: 10/78 -FINAL REPORT
PLAN ID.....: (AP-6118)(DU-B106) WASTEWATER TREATMENT TECHNOLOGY PROGRAMS
FINAL OUTPUT.: REPORT EVAL ELIM. OR CONTROL OF POLLUTION. 0043
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-003576 SSIE-GMA 4222 1 EPA -R805661-01 TASK-M6118-41
ORD -RM10B51-1078 MAND-10-01 AP -6118
DU -B106 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
COMMENT.....: 1HC611-$296000; XH1627-$113000; 1RX103-$240000 0043
1DC618-$4000 0043
ABSTRACT.....: OBJECTIVE: TO PROVIDE FOR TECHNICAL ASSISTANCE AND OPERATION AND MAINTENANCE SUPPORT TO A SMALL NATIVE COMMUNITY FOR THE OPERATION OF A CENTRAL UTILITY TYPE FACILITY (INCLUDING WATER SUPPLY AND WASTE TREATMENT SYSTEMS) FOR EVALUATION OF ENGINEERING PERFORMANCE AND INSTITUTIONAL MANAGEMENT. FINAL OUTPUT: REPORT WHICH EVALUATES METHODS TO PROVIDE CENTRAL COMMUNITY FACILITIES FOR SAFE WATER AND ELIMINATION OR CONTROL OF POLLUTION IN SMALL COMMUNITIES LACKING SUCH FACILITIES.

**PROJECT: 00532-GENERAL METHODOLOGY FOR EVALUATING URBAN STORMWATER QUALITY MANAGEMENT ALTERNATIVES
STARTING/ COMPLETION DATE : 06/78 - 06/79 : FUNDING : ESTIMATED - FY78 / $ 50000
TASK CODE=C611A-0007 **EPA=R805664 ** (GRANT) PRIOR FY /

EPA OFFICER.: C FAN EPA/MERL - CINC
INVESTIGATOR.: JP HEANEY STATE UNIV SYS OF FLORIDA ENV ENG DEPT
WC HUBER STATE UNIV SYS OF FLORIDA ENV ENG DEPT
D AGGIDIS STATE UNIV SYS OF FLORIDA ENV ENG DEPT
KJ SMOLENYAK STATE UNIV SYS OF FLORIDA ENV ENG DEPT
MILESTONES...: 06/79 -FINAL REPORT SWMM USER'S MANUAL
PLAN ID.....: (AP-611A)(DU-B106) URBAN RUNOFF POLLUTION CONTROL
FINAL OUTPUT.: USER'S MANUAL 0012
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT 0012
30-99 RONMENTAL
ORDIS CODES..: RECN-000532 SSIE-GMA 5094 EPA -R805664 TASK-C611A-0007
ORD -RC10B30-5078 MAND-10-01 MAND-30-99
AP -611A DU -B106 LABT-ALN

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVE OF THIS PROJECT IS TO PRESENT A GENERAL METHODOLOGY FOR EVALUATING THE COST-EFFECTIVENESS OF A WIDE RANGE OF URBAN STORMWATER QUALITY MANAGEMENT ALTERNATIVES. WORK TO DATE SHOWS HOW TO EVALUATE AND COMPARE SOME OF THE AVAILABLE CONTROL OPTIONS, I.E., STORAGE, TREATMENT, STREET SWEEPING AND SEWER FLUSHING. THIS WORK WILL BE UPDATED AND EXTENDED TO INCLUDE ANALYSIS OF VARYING LEVELS OF SOPHISTICATION. RESULTS WILL BE PRESENTED AS A USER'S MANUAL.

**PROJECT: 01135-CHROMOSOME STUDIES IN HUMAN SUBJECTS EXPOSED TO ARSENIC IN DRINKING WATER

STARTING/ COMPLETION DATE : 05/78 - 05/80 : FUNDING : ESTIMATED - FY78 / $ 33000
TASK CODE=D6148-029C **EPA=R805665-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: DG GREATHOUSE EPA/HERL - CINC
INVESTIGATOR.: BK VIG STATE MENTAL HLTH INST
MILESTONES...: 03/80 -PROJECT COMPLETION & FINAL REPORT
PLAN ID.....: (AP-6148)(DU-C110) WATER SUPPLY - HEALTH EFFECTS RESEARCH
MANDATE.....: 10-13 SOLID WASTE DISPOSAL ACT
ORDIS CODES..: RECN-001135 SSIE-GMA 5376 EPA -R805665-01 TASK-D6148-029C
ORD -RD10830-1078 MAND-10-13 AP -6148
DU -C110 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE PROJECT IS AIMED AT FINDING OUT IF CHROMOSOME EXPOSURE OF HUMAN POPULATION FOR 5 OR MORE YEARS TO ARSENIC AT CONCENTRATIONS OF 0.05 MG/L OR HIHER IN DRINKING WATER INCREASES THE INCIDENCE OF GENETIC DAMAGE MEASURED AS CHROMOSOMES ABERRATIONS AND SISTER CHROMATID EXCHANGES (SCE'S) IN COMPARISON TO THOSE INDIVIDUALS WHO HAVE BEEN DRINKING WATER CONTAINING ARSENIC LESS THAN 0.01 MG/L, A LIMIT RECOMMENDED BY THE U.S.E.P.A. THE PLAN CALLS FOR ANALYZING LYMPHOCYTES GROWN IN VITRO. FAMILY HISTORIES ABOUT ABNORMALITIES OF SKIN AND OTHER ORGANS OF THE BODY SHALL BE COLLECTED AS WELL AS THE DATA ON FETAL WASTAGE AND ABNORMALITIES OF BIRTHS AMONG THE OFFSPRING OF THE COUPLES WHO HAVE BEEN DRINKING ARSENIC-WATER. THE STUDIES SHALL BE CARRIED OUT IN THE AREA AROUND RENO, NEVADA, WHERE A LARGE NUMBER OF FAMILIES IN RURAL AREAS DEPEND UPON THE WELL WATER CONTAINING AS HIGH AN AMOUNT OF ARSENIC AS 2 MG/L

**PROJECT: 03785-CONTAMINANT DISPERSION IN LAKE SUPERIOR

STARTING/ COMPLETION DATE : 06/78 - 12/81 : FUNDING : ESTIMATED - FY78 / $ 70000
TASK CODE=N769 -044 **EPA=R805667 ** (GRANT) PRIOR FY /

EPA OFFICER.: JF PAUL EPA/ERL - DULUTH
INVESTIGATOR.: M SYDOR UNIV OF MINNESOTA
MILESTONES...: 12/81 -FINAL REPORT AND PROGRAM PACKAGES
PLAN ID.....: (AP-769)(DU-) * NO TEXT FOUND **
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-003785 SSIE-GMA 4937 EPA -R805667 TASK-N769 -044
ORD -RN10830-1078 MAND-10-01 AP -769
PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVE OF THIS PROJECT IS TO APPLY THE RESULTS OF PAST REMOTE SENSING AND NUMERICAL MODELING OF LAKE SUPERIOR, FUNDED UNDER EPA GRANTS R805286-01 AND R805175-01 TO DEVELOP METHODS AND PROGRAM PACKAGES USEABLE FOR PREDICTION OF WATER QUALITY IN LAKE SUPERIOR AND ITS CRITICAL EMBAYMENTS.

**PROJECT: 03929-INVESTIGATION OF ENZYMATIC SCREENING TESTS FOR MUTAGENS IN ENVIRONMENTAL POLLUTANTS

STARTING/ COMPLETION DATE : 11/77 - 10/78 : FUNDING : ESTIMATED - FY78 / $ 20000
TASK CODE=Q787 -10 **EPA=R805671-01 ** (GRANT) PRIOR FY /

EPA OFFICER,: NL RICHARDS EPA/ERL -GULF BREEZE
INVESTIGATOR,: J SCHMIDTLULLE UNIV OF DENVER ARTS & SCI/CHEM DEPT
MILESTONES,..: 10/78 -PRELIMINARY EVALUATION OF SCREENING METHODS
10/79 -VALIDATION, IMPROVEMENT OF CARCINOGEN SCREENING METHODS
PLAN ID.....: (AP-787)(DU-) * NO TEXT FOUND **
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
20-62 DAA FOR ENERGY ,MINERALS, AND INDUSTRY
30-99 HEMISTRY 0014
ORDIS CODES,.: RECN-003929 SSIE-GMA 5498 EPA -R805671-01 TASK-Q787 -10
ORD -RM10830-5078 MAND-10-01 MAND-20-62
MAND-30-99 AP -787 LABT-HEE

PROJ STATUS,.: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVE OF THIS RESEARCH IS TO STUDY THE FEASIBILITY OF THE IN VITRO ACTIVATION OF MICROSOMAL DRUG-METABOLIZING ENZYME SYSTEMS FOR THE DEVELOPMENT OF A RAPID AND SENSITIVE PRESCREENING TEST FOR MUTAGENICITY OF SYNFUEL RELATED ENVIRONMENTAL POLLUTANTS, THEIR DERIVATIVES AND THEIR METABOLIC PRODUCTS AS THEY MAY OCCUR ON LAND AND IN AQUATIC AND MARINE ENVIRONMENTS.

**PROJECT: 02533-IN VIVO METHODS FOR ASSESSING NEUROTOXICITY

STARTING/ COMPLETION DATE : 07/78 - 06/81 : FUNDING : ESTIMATED - FY78 / $ 66000
TASK CODE=H601E-8897 **EPA=R805693 ** (GRANT) PRIOR FY /

EPA OFFICER,: L REITER EPA/HERL - RTP
INVESTIGATOR,: R BORNSCHEIN UNIV OF CINCINNATI CIV & ENV ENG DEPT
IA MICHAELSON UNIV OF CINCINNATI CIV & ENV ENG DEPT
MILESTONES,..: 06/81 -FINAL REPORT
PLAN ID.....: (AP-601E)(DU-A105) IDENTIFICATION OF HEALTH EFFECTS: NON-PESTICIDE, MULTI-ROUTE
FINAL OUTPUT,: PUBLICATION IN OPEN LITERATURE 0011
MANDATE.....: 30-99 VIORAL TOXICOLOGY 0011
ORDIS CODES,.: RECN-002533 SSIE-GMA 5478 EPA -R805693 TASK-H601E-8897
ORD -RM10830-3078 MAND-30-99 AP -601E
DU -A105 LABT-HEE

PROJ STATUS,.: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE STUDY WILL DEVELOP NEW METHODOLOGIES FOR THE IN VIVO DETERMINATION OF NEUROTOXICITY WITHIN THE CNS. THE TEST SYSTEM WILL UTILIZE BOTH BEHAVIORAL AND BIOCHEMICAL MEASURES TO EVALUATE HEAVY METAL TOXICITY IN THE MOUSE. THIS APPROACH WILL RELY HEAVILY UPON A PROCEDURE, DEVELOPED BY ANDEN ET AL., IN WHICH THE FUNCTIONING OF THE EXTRAPYRAMIDIAL SYSTEM IS REFLECTED IN AN ANIMAL'S ASYMMETRIC POSTURE AND LOCOMOTION. THIS "ROTATIONAL BEHAVIOR" WILL BE USED (1) TO EVALUATE THE EFFECTS OF ACUTE INTRACEREBRAL ADMINISTRATION OF NEUROTOXINS, AND (2) TO UNMASK COVERT CHANGES IN NEURAL FUNCTION WHICH MAY ARISE AS A RESULT OF LONG-TERM LOW LEVEL SYSTEMIC EXPOSURE TO NEUROTOXINS. THE AIM IS TO DEVELOP AN APPROACH WHICH LIES BETWEEN STRICT BEHAVIORAL ANALYSES OF NEUROTOXICITY WHICH DO NOT LEND THEMSELVES TO STUDIES OF MECHANISM OF ACTION, AND THE MORE CLASSICAL IN VITRO BIOCHEMICAL AND NEUROPHYSIOLOGICAL ASSAYS WHICH DO NOT READILY PERMIT EXTRAPOLATION TO THE BEHAVIORAL LEVEL. INITIAL STUDIES WILL FOCUS ON THE USEFULNESS OF THIS METHODOLOGY IN THE ASSESSMENT OF NEUROTOXICITY ARISING FROM EXPOSURE TO HEAVY METALS, PARTICULARLY INORGANIC LEAD, CADMIUM AND MERCURY.

**PROJECT: 00563-PILOT SCALE EVALUATION OF A GAS PRODUCER FOR THERMAL CONVERSION OF SLUDGE
STARTING/ COMPLETION DATE : 08/78 - 02/80 : FUNDING : ESTIMATED - FY78 / $ 53177
TASK CODE=C611B-0019 **EPA=R805703-01 ** (GRANT) PRIOR FY /

EPA OFFICER..: H WALL EPA/MERL - CINC
INVESTIGATOR..: ED SCHROEDER UNIV OF CALIFORNIA SCH OF ENG
MILESTONES...: 06/80 -FINAL REPORT PUBLISHED
PLAN ID.....: (AP-611B)(DU-B106) WASTEWATER TREATMENT TECHNOLOGY PROGRAMS
MANDATE.....: 30-99 ICAL ENERGY, COMBUSTION ENERGY 0012
ORDIS CODES..: RECN-000563 SSIE-GMA 5109 EPA -R805703-01 TASK-C611B-0019
ORD -RC10830-3078 MAND-30-99 AP -611B
DU -B106 LABT-ALN

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVE OF THE PROGRAM IS TO MAKE A PILOT SCALE EVALUATION OF A PROCESS TO EVALUATE THE "APPLICATION OF PACKED BED GAS PRODUCERS TO THE PRODUCTION OF COMBUSTIBLE GASES FROM MUNICIPAL WASTEWATER SLUDGES." THE PROJECT WILL CONSIST OF THE FOLLOWING: 1. DEVELOPMENT OF A METHOD OF MAKING A BRIQUETTE FROM MUNICIPAL WASTEWATER SLUDGE AND REFUSE DERIVED FUEL SUITABLE FOR USE IN A PACKED BED GAS PRODUCER. 2. A PILOT SCALE OPERATION OF A PACKED BED USING THE SLUDGE MDF BRIQUETTES TO DEMONSTRATE THE UNIT. 3. THE ENGINEERING AND ECONOMIC EVALUATION OF THE UNIT AND DATA OBTAINED TO DETERMINE THE SUITABILITY OF THE PROCESSES FOR USE AS A MUNICIPAL WASTEWATER SLUDGE DISPOSAL METHOD.

**PROJECT: 01614-TRANSFER AND UTILIZATION OF PARTICULATE CONTROL TECHNOLOGY

STARTING/ COMPLETION DATE : 12/77 - 12/80 : FUNDING : ESTIMATED - FY78 / $ 49940
TASK CODE=F624A-417 **EPA=R805725 ** (GRANT) PRIOR FY /

EPA OFFICER.:	DC DREHMEL	EPA/IERL - RTP		
INVESTIGATOR.:	FP VENDITTI	UNIV OF DENVER	DENVER RES INST	
	RE PRESSEY	UNIV OF DENVER	DENVER RES INST	
	RE WILLIAMS	UNIV OF DENVER	DENVER RES INST	
	JA ARMSTRONG	UNIV OF DENVER	DENVER RES INST	
	AJ CULBERTSON	UNIV OF DENVER	DENVER RES INST	
MILESTONES...:	12/80 -GRANT COMPLETION			
PLAN ID.....:	(AP=624A)(OU=L110) UTILITY AND INDUSTRIAL POWER PRODUCTION			
FINAL OUTPUT.:	SYMPOSIA CONDUCTED IN JULY EACH YEAR; DOCUMENTATION		0029	
	PROVIDED AS REPORTS, PUBLICATION AND DISTRIBUTION		0029	
	OF PROCEEDINGS.		0029	
MANDATE.....:	10-99	0029		
CURR. RESULTS:	SYPOSIUM PROGRAM ORGANIZED, 2 MAILINGS OF ANNOUNCEM		0029	
ORDIS CODES..:	REGN=001614	SSIE-GMA 4975	EPA =R805725	TASK=F624A-417
	ORD =RF10H30-1078	MAND=10-99	AP =624A	
	OU =L110	LABT=EMI		

PROJ STATUS..: PROJECT=ACTIVE DATA=ORIGINAL CATEGORY=RESEARCH

ABSTRACT.....: OBJECTIVE: THE OBJECTIVE OF THE PROPUSED PROJECT IS TO PLAN, ORGANIZE, PUBLICIZE, AND CONDUCT A SERIES OF ANNUAL SYMPOSIA ON THE TRANSFER AND UTILIZATION OF TECHNOLOGY FOR THE CONTROL OF PARTICULATE EMISSIONS. A COROLLARY OBJECTIVE IS TO CONDUCT A SERIES OF TUTORIAL SESSIONS AND/OR WORKSHOPS IN THE DESIGN OF ELECTROSTATIC PRECIPITATORS, FABRIC FILTERS, AND SCRUBBERS, WITH SPECIAL ATTENTION TO THEORY, MODELING AND INSTRUMENTATION. OUTPUTS: A SYMPOSIA WILL BE CONDUCTED LATE IN JULY OF EACH YEAR AT APPROPRIATE LOCATIONS SUBJECT TO APPROVAL BY THE PROJECT OFFICER OF THE INDUSTRIAL ENVIRONMENTAL RESEARCH LABORATORY AT RESEARCH TRIANGLE PARK OF EPA. THE THREE MAJOR TECHNOLOGIES USED FOR CONTROLLING PARTICULATE EMISSIONS SCRUBBERS, ELECTROSTATIC PRECIPITATORS, AND FABRIC FILTERS WOULD BE DISCUSSED. OTHER TECHNOLOGIES WOULD BE INCLUDED AS THEY BECOME MORE FULLY DEVELOPED. AS PART OF THE TOTAL EFFORT, PROPER DOCUMENTATION WOULD BE PROVIDED IN THE FORM OF WRITTEN PERIODIC REPORTS, A FINAL REPORT AND, MOST IMPORTANT OF ALL, PUBLICATION AND DISTRIBUTION OF THE PROCEEDINGS. RESULTS TO DATE: THE SYMPOSIUM PROGRAM HAS BEEN ORGANIZED, TWO MAILINGS OF ANNOUNCEMENTS HAVE BEEN MADE. ATTENDANCE OF AT LEAST 500 PEOPLE IS EXPECTED.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REPORT: ORDCONV (VERSION V2.0) * OFFICE OF RESEARCH AND DEVELOPMENT *
LIST OF PROJECTS FROM MATCHED GRANT SYSTEM INPUT

RUN DATE: 06/29/79 * O R D I S D A T A E X T R A C T * PAGE- 206

**PROJECT: 01802-STUDIES IN POLLUTION AEROSOL DYNAMICS

STARTING/ COMPLETION DATE : 04/78 - 04/78 : FUNDING : ESTIMATED - FY78 / $ 60000
TASK CODE=G603A-AC-16 **EPA=R805736-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: JL DURHAM EPA/ESRL - RTP
INVESTIGATOR.: SK FRIEDLANDER CALIFORNIA INST OF TECH DEPT OF CHEM & CHEM ENGIN
MILESTONES...: 10/79 -REPORT: AEROSOL FORM. IN URBAN AIR (W/ORGANICS, HNO3, NH3)
04/81 -ORD REPORT: AEROSOL FORM. IN SYN. MIX. AIR (NO2, HNO3, NH3, SO2 A
PLAN ID.....: (AP-603A)(DU-A125) ATMOSPHERIC PROCESSES AND EFFECTS
MANDATE.....: 10-02 CLEAN AIR ACT
ORDIS CODES..: RECN-001802 SSIE-GMA 4909 EPA -R805736-01 TASK-G603A-AC-16
ORD -RG10B30-1078 MAND-10-02 AP -603A
DU -A125 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: A GOAL OF THIS RESEARCH IS TO INVESTIGATE EXPERIMENTALLY AND THEORETICALLY THE FACTORS DETERMINING THE FORMATION OF AEROSOL NITRATE AND ORGANIC COMPOUNDS AND THEIR DISTRIBUTION WITH RESPECT TO PARTICLE SIZE. THE RATE OF FORMATION OF NEW PARTICLES IN A CHEMICALLY REACTING GAS PRODUCING A CONDENSABLE PRODUCT DEPENDS ON THE CONCENTRATION OF PRE-EXISTING PARTICLES. THIS IS OF IMPORTANCE IN DETERMINING THE PARTICLE SIZE DISTRIBUTION AND CHEMICAL COMPOSITION OF THE RESULTING AEROSOL. FURTHER EXPERIMENTAL AND THEORETICAL STUDIES OF NEW PARTICLE FORMATION IN THE PRESENCE OF A PRE-EXISTING AEROSOL WILL BE MADE. PHOTOCHEMICAL AEROSOL FORMATION WILL BE STUDIED IN SPECIALLY BUILT 2 MIL TEFLON BALLOON REACTORS, 60 TO 80 M3 IN VOLUME. IT IS HYPOTHESIZED THAT NH3 PLAYS A KEY ROLE IN THE FORMATION OF NITRATE AND ORGANIC COMPOUNDS AND THE NH3 CONCENTRATIONS WILL BE CAREFULLY CONTROLLED. OTHER SPECIES PRESENT WILL BE NO/NO2 AND PROPYLENE. THE PARTICLE SIZE DISTRIBUTION WILL BE MEASURED WITH A COMBINATION OF AN ELECTRICAL AEROSOL ANALYZER AND OPTICAL PARTICLE COUNTER. NITRATE CONCENTRATIONS WILL BE DETERMINED USING A COMBINED VOLATILIZATION-CHEMILUMINESCENCE TECHNIQUE.

**PROJECT: 02137-SIMPLIFIED SAMPLING SYSTEMS

STARTING/ COMPLETION DATE : 10/77 - 09/80 : FUNDING : ESTIMATED - FY78 / $ 30000
TASK CODE=G7128-8C-10 **EPA=R805738-01 ** (GRANT) PRIOR FY /

EPA OFFICER,: KT KNAPP EPA/ESRL - RTP
INVESTIGATOR,: RJ HEINSOHN PENNSYLVANIA STATE UNIV MECH ENG DEPT
JW DAVIS PENNSYLVANIA STATE UNIV MECH ENG DEPT
MILESTONES,..: 06/78 -DEMONSTRATE FEASIBILITY
09/78 -CONSTRUCT FIELD PROTOTYPE
11/78 -DELIVER FIELD PROTOTYPE TO EPA
12/78 -BEGIN FIELD TESTING
09/80 -FINAL REPORT
PLAN ID.....: (AP-712B)(DU-A130) CHAR, AND MEASUREMENT METHODS DEVELOPMENT (AIR)
FINAL OUTPUT,: A SIMPLIFIED SOURCE SAMPLING SYSTEM FOR PARTICULATE 0043
EMISSION MEASUREMENT. 0043
MANDATE.....: 10-02 CLEAN AIR ACT
CURR, RESULTS: GRANT AWARDED AND WORK BEGUN ON USE OF A DILUTION E 0043
PUMP IN THIS SYSTEM. 0043
ORDIS CODES,.: RECN-002137 SSIE-GMA 4912 EPA -R805738-01 TASK-G7128-8C-10
ORD -RG10830-1078 MAND-10-02 AP -712B
DU -A130 LABT-ALM

PROJ STATUS,.: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE SPECIFIC OBJECTIVES OF THIS TASK ARE TO DESIGN, BUILD, AND TEST A SIMPLIFIED SOURCE SAMPLING SYSTEM. THIS SYSTEM WILL BE SUITABLE FOR USE AS METHOD 5, METHOD 17, OR AS A DILUTION SYSTEM WHICH COLLECTS THE PARTICLE MATTER AT AMBIENT TEMPERATURE AND PRESSURE. THE PERFORMANCE OF THE SYSTEM WILL BE COMPARED DIRECTLY TO THE STANDARD METHOD 5 AND 17 TRAINS IN ACTUAL SOURCE TESTS AND COMPARISON MADE AS TO THE DISTRIBUTION OF PARTICLE MATTER IN THE SYSTEM AS WELL AS TOTAL LOADING. EASE OF HANDLING AND USE ARE ALSO FACTORS WHICH WILL BE EVALUATED. THE FINAL OUTPUT SHOULD BE A SIMPLIFIED SOURCE SAMPLING SYSTEM FOR PARTICULATE MASS EMISSION MEASUREMENT. THE GRANT HAS BEEN AWARDED AND WORK HAS BEGUN ON THE USE OF A DILUTION EJECTOR PUMP IN THIS SYSTEM.

**PROJECT: 00266-THE DEVELOPMENT AND DEMONSTRATION OF A HYDROPERM MICROFILTRATION SYSTEM FOR THE TREATMENT OF BATTERY MANUFACTURE WASTEWATER EFFLUENT
STARTING/ COMPLETION DATE : 01/78 - 01/79 : FUNDING : ESTIMATED - FY78 / $ 96000
TASK CODE=R6108-466 **EPA=R805748-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: CM DARVIN EPA/IERL - CINC
INVESTIGATOR.: JA BITLER GENERAL BATTERY CORP
J BARANSKI GENERAL BATTERY CORP
TR SUNDARAM HYDRONAUTICS INC APPL SCI DEPT

MILESTONES...: 12/79 -FINAL REPORT RECEIVED
PLAN ID.....: (AP-6108)(DU-B118) MATERIALS PROCESSING, INDUSTRIAL PT. SOURCES (WATER)
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
20-30 AA FOR TOXIC SUBSTANCES
30-99 EWATER TECHNOLOGY
0006
ORDIS CODES..: RECN-000266 SSIE-GMA 5091 EPA -R805748-01 TASK-R6108-466
ORD -R810830-5078 MAND-10-01 MAND-20-30
MAND-30-99 AP -6108 DU -B118 LABT-EMI

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVE IS TO DEMONSTRATE THE APPLICABILITY OF HYDROPERM MICROFILTRATION FOR THE VIRTUALLY COMPLETE REMOVAL OF SUSPENDED SOLIDS, AND FOR THE REMOVAL OF TOXIC HEAVY METALS, SPECIFICALLY LEAD, TO LEVELS BELOW 0.05 PPM FROM BATTERY MANUFACTURE WASTEWATER EFFLUENTS. HYDROPERM IS A MICROFILTRATION SYSTEM, THE PRINCIPAL ELEMENT OF WHICH IS A HOLLOW TUBULAR FILTER OF DISCRETE WALL THICKNESS (APPROXIMATELY 6-9 MM ID) MADE OF THERMOPLASTIC MATERIAL AND CONTAINING MICRON-SIZE PORES. AT RELATIVELY LOW PRESSURES (APPROXIMATELY 5 PSI), THESE TUBES ARE CAPABLE OF VIRTUALLY TOTAL REMOVAL OF SUSPENDED SOLIDS AS WELL AS SIGNIFICANT AMOUNTS OF HIGH MOLECULAR WEIGHT DISSOLVED SOLIDS FROM A VARIETY OF INDUSTRIAL AND DOMESTIC WASTEWATERS, WHILE MAINTAINING REASONABLY HIGH PERMEATION RATES. THE FILTRATE PERMEATES THROUGH THE POROUS WALLS OF THE TUBE IN A DIRECTION PERPENDICULAR TO THE DIRECTION OF FLOW OF THE FEED. THE TUBES THEMSELVES CAN BE OPTIMIZED IN TERMS OF THEIR PERFORMANCE BY PROPER CHOICE OF OPERATING PRESSURE AND FEED CIRCULATION VELOCITY. MOREOVER, THE TUBES CAN BE MADE WITH CONTROLLED MICROPOROSITY AND PURE-SIZE DISTRIBUTION SO AS TO OPTIMIZE THEIR APPLICATION TO A PARTICULAR TYPE OF WASTEWATER. THIS WILL BE THE SUBJECT OF PHASE I OF THE PROGRAM. PHASE II WILL BE A COMPREHENSIVE, 8-MONTH PROGRAM INVOLVING THE DESIGN, CONSTRUCTION, INSTALLATION AND DEMONSTRATION OF A 24,000 GPD HYDROPERM SYSTEM, INTERFACING WITH THE EXISTING WASTEWATER TREATMENT PLANT AT THE GENERAL BATTERY PLANT IN HAMBURG, PENNSYLVANIA. FOUR COMPACT HYDROPERM MODULES WILL BE USED, EACH CONTAINING 100 SQUARE FT OF FILTRATION SURFACE AREA.

**PROJECT: 02153-REMOTE ATMOSPHERIC MEASUREMENT OF SO2 AND CH4 USING A LINBO3 TUNABLE SOURCE

STARTING/ COMPLETION DATE : 12/77 - 09/78 : FUNDING : ESTIMATED - FY78 / $ 25000
TASK CODE=G7128-BC-31 **EPA=R805750-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: WF HERGET EPA/ESRL - RTP
INVESTIGATOR.: RL BYER STANFORD UNIV SCH OF HUMANITIES & SCI
RL HERBST STANFORD UNIV SCH OF HUMANITIES & SCI
MILESTONES...: 12/78 -COMPLETION OF MEASUREMENTS
04/79 -COMPLETION OF FINAL REPORT
PLAN ID.....: (AP-7128)(DU-A130) CHAR. AND MEASUREMENT METHODS DEVELOPMENT (AIR)
FINAL OUTPUT.: CAPABILITIES OF PROTOTYPE DIFFERENTIAL ABSORPTION L 0043
SYSTEM WILL BE DETERMINED. 0043
MANDATE.....: 10-02 CLEAN AIR ACT
ORDIS CODES..: RECN-002153 SSIE-GMA 4915 EPA -R805750-01 TASK-G7128-BC-31
ORD -RG10830-1078 MAND-10-02 AP -7128
DU -A130 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVE - DEMONSTRATE REMOTE MEASUREMENT OF SO2 AND CH4 CONCENTRATIONS USING A TUNABLE INFRARED LASER SYSTEM. APPROACH - A LINBO3 LASER SOURCE CONTINUOUSLY TUNEABLE OVER THE 1.4-4.1 MICRON SPECTRAL RANGE WILL BE USED TO DEMONSTRATE REMOTE SINGLE-ENDED MEASUREMENT OF SO2 AND CH4 USING ATMOSPHERIC BACKSCATTER AND TOPOGRAPHICAL TARGETS. OUTPUT - THE CAPABILITIES OF A PROTOTYPE DIFFERENTIAL ABSORPTION LIDAR SYSTEM WILL BE DETERMINED. RESULTS TO DATE - ACTIVITY ON THIS PROGRAM HAS JUST BEEN INITIATED. (THIS WORK IS PARTIALLY FUNDED BY THE U.S. AIR FORCE)

**PROJECT: 00278-TREATMENT OF WASTEWATER FROM CHROMIUM PLATING LINES

STARTING/ COMPLETION DATE : 03/78 - 06/79 : FUNDING : ESTIMATED - FY78 / $ 38000
TASK CODE=B6108-718 **EPA=S805760-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: MK STINSON EPA/IERL - CINC
INVESTIGATOR.: CR WHEELER SEABOARD METAL FIN CO
JL EISENMANN SEABOARD METAL FIN CO
MILESTONES...: 06/79 -FINAL REPORT RECEIVED
PLAN ID.....: (AP-6108)(DU-B118) MATERIALS PROCESSING, INDUSTRIAL PT. SOURCES (WATER)
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
20-30 AA FOR TOXIC SUBSTANCES
30-99 TROCHEMICAL TREATMENT 0006
ORDIS CODES..: RECN-000278 SSIE-ZZ 435 EPA -S805760-01 TASK-B6108-718
ORD -R810C30-5078 MAND-10-01 MAND-20-30
MAND-30-99 AP -6108 DU -B118 LABT-EMI

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: MICRO-PORE RESEARCH WILL INSTALL AND OPERATE A PROTOTYPE ELECTRODIALYSIS-BASED TREATMENT SYSTEM ON ONE OF SEABOARD'S CHROME PLATING LINES. THS SYSTEM WILL RECIRCULATE A RECLAIM RINSE SOLUTION THROUGH AN ELECTRODIALYSIS MEMBRANE STACK TO RECOVER AND CONCENTRATE UP TO 1 KG PER HOUR OF CHROMIC ACID FROM THE RINSE SOLUTION. CONCENTRATED PRODUCT FROM THE SYSTEM WILL BE SUITABLE FOR DIRECT RETURN TO THE PLATE TANKS. RECLAIM SOLUTION WILL BE MAINTAINED AT A LOW STEADY-STATE CONCENTRATION TO SUBSTANTIALLY REDUCE CHROMIUM VALUES GOING TO DESTRUCT OR SEWER AND ELIMINATE WASTE STORAGE AND/OR DISPOSAL PROBLEMS OF SPENT SOLUTIONS.

**PROJECT: 02159-AN "IN-STACK" DIFFUSION CLASSIFICATION FOR AEROSOL SIZE DISTRIBUTION MEASUREMENT

STARTING/ COMPLETION DATE : 10/77 - 09/79 : FUNDING : ESTIMATED - FY78 / $ 34000
TASK CODE=G7128-BC-50 **EPA=R805762-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: KT KNAPP EPA/ESRL - RTP
INVESTIGATOR.: DA LUNDGREN STATE UNIV SYS OF FLORIDA ENV ENG DEPT
MILESTONES...: 09/78 -COMPLETE CALIBRATION OF FIELD PROTOTYPE
12/78 -DELIVER A CALIBRATED FIELD PROTOTYPE TO EPA
12/78 -BEGIN FIELD STUDIES
09/79 -FINAL REPORT
PLAN ID.....: (AP-7128)(DU-A130) CHAR, AND MEASUREMENT METHODS DEVELOPMENT (AIR)
FINAL OUTPUT.: AN IN-STACK DIFFUSION SIZE CLASSIFIER! 0044
MANDATE.....: 10-02 CLEAN AIR ACT 0044
CURR. RESULTS: FIELD TESTING CONDUCTED; SYSTEM WORKED AND IS PRACT 0044
FOR FIELD USE. 0044
ORDIS CODES..: RECN-002159 SSIE-GMA 4911 EPA -R805762-01 TASK-G7128-BC-50
ORD -RG10830-1078 LABN-G7128-BC-12 MAND-10-02
AP -7128 DU -A130 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE PRINCIPAL OBJECTIVES OF THIS PROJECT ARE TO DESIGN, CONSTRUCT, CALIBRATE AND FIELD EVALUATE AN IN-STACK DIFFUSION CLASSIFICATION DEVICE WHICH CAN OPERATE UNDER ADVERSE ENVIRONMENTAL CONDITIONS OF TEMPERATURE, PRESSURE, MOISTURE CONTENT, AND GAS COMPOSITION. AFTER A CAREFUL STUDY OF KNOWN OR SUSPECTED OPERATIONAL PROBLEM AREAS, A PROTOTYPE DEVICE WILL BE CONSTRUCTED AND CALIBRATED IN THE LABORATORY. THIS DEVICE WILL THEN BE FIELD TESTED AND EVALUATED ON SEVERAL TYPES OF INDUSTRIAL EFFLUENT GAS STREAMS. THE FINAL OUPUT WILL BE AN IN-STACK DIFFUSION SIZE CLASSIFIER. PRELIMINARY FIELD TESTING WAS CONDUCTED USING A LABORATORY TYPE SYSTEM. THE SYSTEM WORKED AND DEMONSTRATED THAT THE CONCEPT IS PRACTICAL FOR FIELD USE AND CAN PRODUCE THE DESIRED SUBMICRON AEROSOL MASS DISTRIBUTION DATA.

**PROJECT: 01119-STUDY OF GIARDIA CYSTS WITH PHASE AND SCANNING-ELECTRON MICROSCOPY

STARTING/ COMPLETION DATE : 00/78 - UNK : FUNDING : ESTIMATED - FY78 / $ 0
TASK CODE=D6148-012 **EPA=R805773-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: TH ERICKSEN EPA/HERL - CINC
INVESTIGATOR.: AS TUMBES GEORGE MASON UNIV UNDERGRADUATE SCH
MILESTONES...: 02/79 -FINAL REPORT
PLAN ID.....: (AP-6148)(DU-C110) WATER SUPPLY - HEALTH EFFECTS RESEARCH
MANDATE.....: 10-13 SOLID WASTE DISPOSAL ACT
ORDIS CODES..: RECN-001119 SSIE-GMA 5374 EPA -R805773-01 TASK-D6148-012
ORD -RD10830-1078 MAND-10-13 AP -6148
DU -C110 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE PRINCIPAL OBJECTIVES OF THIS PROJECT ARE (1) TO DESCRIBE THE SURFACE MORPHOLOGY OF CYSTS EXTRACTED FROM FECES OF SEVERAL DIFFERENT ANIMAL HOSTS AND (2) TO EVALUATE THE EFFICIENCY OF A NEWLY DEVELOPED PROCEDURE FOR FILTERING, CONCENTRATING AND QUANTIFYING GIARDIA CYSTS FROM SAMPLES OF FINISHED WATER WITH PHASE AND SCANNING-ELECTRON OPTICS. THE APPROACH FOR THE FIRST OBJECTIVE INVOLVES EXTRACTING THE CYSTS FROM FECAL MATERIAL USING SUCROSE GRADIENT CENTRIFUGATION, CONCENTRATING ON POLYCARBONATE MEMBRANES AND VISUALIZING WITH PHASE AND SCANNING-ELECTRON OPTICS. THE SECOND OBJECTIVE WILL INVOLVE THE FILTRATION AND CONCENTRATION OF FINISHED WATER ON SIMILAR MEMBRANES WITH THE SAME MEANS OF VISUALIZATION. THE TECHNIQUES ARE CURRENTLY BEING PUBLISHE

**PROJECT: 03951-MUNICIPAL WASTEWATER REUSE TECHNOLOGY TRANSFER

STARTING/ COMPLETION DATE : 01/78 - 12/78 : FUNDING : ESTIMATED - FY78 / $ 32000
TASK CODE=S622C-01 **EPA=R805775-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: JE SMITH EPA/EHIC - CINC
INVESTIGATOR.: MD HEATON AMER WATER WORKS ASSN
EM REHFIELD AMER WATER WORKS ASSN
EF SPITZER AMER WATER WORKS ASSN
PLAN ID.....: (AP=622C)(OU=H115) TECHNICAL INFORMATION PROGRAM
MANDATE.....: 40-99 0052
ORDIS CODES..: RECN-003951 SSIE-ZZ 334 EPA -R805775-01 TASK-S622C-01
ORD -R320830-4078 MAND-40-99 AP -622C
OU -H115 LABT-MTS

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY- ADMIN/SPT.
ABSTRACT.....: CONSIDERABLE RESEARCH ON MUNICIPAL WASTEWATER RESEARCH IS BEING DONE THROUGHOUT THE WORLD, HOWEVER, THE LACK OF DIRECT COMMUNICATIONS BETWEEN THE RESEARCHERS OR EVEN THE KNOWLEDGE OF WHO IS DOING WHAT AND WHERE CANNOT HELP BUT LEAD TO DUPLICATION AND OMISSION. ALSO, OTHERS INTERESTED IN POTENTIAL ADOPTION OF MUNICIPAL WASTEWATER REUSE HAVE NO CENTRAL SOURCE TO OBTAIN INFORMATION ON THE RESEARCH BEING DONE IN THE AREA. TO HELP OVERCOME THE PROBLEM THE AWWA RESEARCH FOUNDATION PROPOSES TO UNDERTAKE A MUNICIPAL WASTEWATER REUSE TECHNOLOGY TRANSFER PROGRAM TO GATHER, PRODUCE AND DISTRIBUTE REUSE INFORMATION TO INTERESTED PARTIES. THE MATERIALS GENERATED WOULD COVER ANY TECHNOLOGY, INCLUDING RELIABILITY AND SEQUENCING, AUTOMATION, INSTRUMENTATION, MONITORING AND CONTROL, WATER QUALITY ASPECTS, HEALTH EFFECTS RESEARCH, SOCIO-ECONOMIC STUDIES, PUBLIC ACCEPTANCE AND ATTITUDES WORK, REUSE PLANNING EFFORTS, FEDERAL INTEREST AND COORDINATION, FUNDING AVAILABILITY, LEGISLATION, REGULATIONS AND GUIDELINES, INTERNATIONAL EFFORTS AND LITERATURE AVAILABILITY AND RELATED CONFERENCES OR WORKSHOPS.

*PROJECT: 02973-REGIONAL VISIBILITY - THE COLORADO PLATEAU

STARTING/ COMPLETION DATE : 06/78 - 06/80 : FUNDING : ESTIMATED - FY78 / $ 20000
TASK CODE=J625C-76 **EPA=R805788-01 ** (GRANT) PRIOR FY /

EPA OFFICER..: M PITCHFORD EPA/EMSL - LAS VEGAS
INVESTIGATOR..: EG WALTHER JOHN MUIR INST/ENV STUDIES
MILESTONES...: 06/80 -FINAL REPORT - SUMMARY OPERATION OF VISIBILITY NETWORK
PLAN ID.....: (AP=625C)(DU=N140) ENERGY-RELATED POLLUTANT & EFFECTS MONITORING, METHODS & TECH.
FINAL OUTPUT..: REPORT DESCRIBING PERFORMANCE OF PHOTOMETER NETWORK 0022
MANDATE.....: 10-02 CLEAN AIR ACT
20-62 OAA FOR ENERGY ,MINERALS, AND INDUSTRY
ORDIS CODES..: RECN=002973 SSIE-GMA 5006 EPA -R805788-01 TASK-J625C-76
ORD -RJ10830-5078 MAND=10-02 MAND=20-62
AP -625C DU -N140 LABT-MTS

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVE/APPROACH: THE PROJECT PROPOSES TO MEASURE (AND COLLECT FROM OTHERS) BACKGROUND VISIBILITY DATA NECESSARY FOR (1) THE SETTING OF VISIBILITY STANDARDS AND (2) THE VALIDATION OF OPERATIONAL MODELS. THE MEASUREMENT PROGRAM RELIES ON A RECENTLY DEVELOPED INSTRUMENT, THE MULTIWAVELENGTH CONTRAST PHOTOMETER. CALCULATIONS AND MEASUREMENTS INDICATE THAT WHILE MULTIWAVELENGTH CONTRAST MEASUREMENTS IN THE BLUE PORTION OF THE VISIBLE SPECTRUM ARE PRIMARILY SENSITIVE TO AEROSOL WITHIN THE MIXING LAYER, CONTRAST MEASUREMENTS IN THE RED PORTION OF THE SPECTRUM ARE SENSITIVE TO AEROSOL ABOVE THE MIXING LAYER. THE RELATIONSHIP BETWEEN WAVELENGTH DEPENDENCE ON CONTRAST MEASUREMENTS TO VERTICAL AEROSOL DISTRIBUTIONS IS QUITE DEPENDENT ON OBSERVATION ANGLE. SINCE CONTRAST MEASUREMENTS ARE RELATED TO BOTH TROPOSPHERIC AND STRATOSPHERIC AEROSOL CONCENTRATIONS, THE INSTRUMENT IS WELL SUITED TO MEASURE/MONITOR CONTRAST CHANGES DUE TO SPATIAL VARIATIONS IN AEROSOL CONCENTRATIONS THAT TAKE PLACE OVER HUNDREDS OF KILOMETERS. SUBJECT CONTRAST IS DIRECTLY RELATED TO VISIBILITY AND CONSEQUENTLY THE CONTRAST TELEPHOTOMETER IS ALSO A DIRECT MEASURE OF VISIBILITY AS A FUNCTION OF SPATIALLY VARYING AEROSOL LOADS. FINAL OUTPUT: FINAL REPORT DESCRIBING PERFORMANCE OF PHOTOMETER NETWORK SYSTEM.

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**PROJECT: 00606-PHYSIOCHEMICAL PARAMETERS REGULATING CHEMICAL AND BIOLOGICAL AVAILABILITY OF TRACE AND TOXIC METALS IN SLUDGE-AMENDED SOI
STARTING/ COMPLETION DATE : 10/78 - 09/80 : FUNDING : ESTIMATED - FY78 / $ 115000
TASK CODE=C6118-071 **EPA=R805789-01 ** (GRANT) PRIOR FY /

EPA OFFICER,: JA RYAN UNKNOWN OFFICE
INVESTIGATOR,: RH PATRICK LOUISIANA STATE UNIV AGRIC & MECH COLLEGE
RP GAMBRELL LOUISIANA STATE UNIV AGRIC & MECH COLLEGE
MILESTONES...: 12/80 -FINAL REPORT PUBLISHED
PLAN ID.....: (AP=611B)(DU=A106) WASTEWATER TREATMENT TECHNOLOGY PROGRAMS
MANDATE.....: 30-99 ENATER 0014
ORDIS CODES..: RECN=000606 SSIE-ZZ 405 EPA -R805789-01 TASK-C6118-071
ORD -10C30-3078 MAND-30-99 AP -611B
PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-UNKN CODE
ABSTRACT.....: THE PRIMARY OBJECTIVE OF THIS PROPOSED RESEARCH IS TO DETERMINE THE EFFECTS OF SOIL PH AND OXIDATION-REDUCTION CONDITIONS ON THE CHEMICAL AND BIOLOGICAL AVAILABILITY OF TRACE AND TOXIC METALS IN SEWAGE SLUDGE APPLIED TO AGRICULTURAL SOILS. AN ADDITIONAL OBJECTIVE IS TO DETERMINE THE EFFECTS OF AN ALTERED REDOX POTENTIAL ON THE METAL CAPACITY OF SOLUBLE AS WELL AS INSOLUBLE, LARGE MOLECULAR WEIGHT HUMIC MATERIALS. SUSPENSIONS OF SLUDGE-AMENDED SOIL WILL BE INCUBATED UNDER CONTROLLED PH AND REDOX POTENTIAL CONDITIONS AND A SEQUENTIAL CHEMICAL FRACTIONATION PROCEDURE WILL BE EMPLOYED TO DETERMINE THE CHEMICAL FORM OF METALS IN THE INCUBATED SUSPENSION. PLANTS WILL BE GROWN IN STIRRED SUSPENSIONS AND IN UNDISTURBED SOIL CORES IN WHICH PH AND OXIDATION-REDUCTION CONDITIONS ARE CONTROLLED TO MEASURE THE TREATMENT EFFECTS ON PLANT UPTAKE OF TRACE AND TOXIC METALS. SOIL AND SLUDGE ORGANICS WILL BE EXTRACTED AND THE STABILITY CONSTANT DETERMINED FOR METAL-ORGANIC COMPLEXES UNDER THE EXPERIMENTAL CONDITIONS. THE RESULTS OF THIS STUDY SHOULD PROVIDE INFORMATION FOR MANAGING LAND APPLICATION OF SEWAGE SLUDGE TO MINIMIZE THE MOBILITY AND BIOLOGICAL AVAILABILITY OF TOXIC M

**PROJECT: 02398-INTERACTION OF COMPLEX POLLUTANT MIXTURES AND PARTICULATES IN CAUSATION OF PULMONARY DISEASE
STARTING/ COMPLETION DATE : 05/78 - 05/81 : FUNDING : ESTIMATED - FY78 / $ 90000
TASK CODE=H601C-8735 **EPA=R805794 ** (GRANT) PRIOR FY /

EPA OFFICER,: JA GRAHAM EPA/HERL - RTP
INVESTIGATOR,: M EHRLICH I I T RES INST
MILESTONES...: 07/78 -BEGIN CHRONIC EXPOSURES TO NO2-O3 MIXTURES
07/79 -BEGIN SHORT-TERM EXPOSURE TO AN NOX COMPOUND
04/80 -BEGIN SHORT-TERM EXPOSURE TO AN SOX COMPOUND
PLAN ID.....: (AP=601C)(DU=A105) REFINEMENT OF HEALTH INFORMATION ON AIR POLLUTANTS
MANDATE.....: 10-02 CLEAN AIR ACT
ORDIS CODES..: RECN=002398 SSIE-ZZ 697 EPA -R805794 TASK-H601C-8735
ORD -RH10C30-1078 MAND-10-02 AP -601C
DU -A105 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVE OF THIS PROJECT IS TO INVESTIGATE THE EFFECTS OF VARIOUS AIR POLLUTANTS ON RESISTANCE TO BACTERIAL AND VIRAL PNEUMONIAS IN MICE. THE WORK WILL INVOLVE EXPOSING ANIMALS TO SINGLE AND COMPLEX MIXTURES OF POLLUTANTS USING BOTH LONG- AND SHORT-TERM MODES. INITIALLY CHRONIC EXPOSURES WILL BE TO MIXTURES OF NO2 AND O3. SECONDLY, SHORT-TERM EXPOSURES TO SPECIFIC SULFATES, SULFITES, NITRATES AND NITRITES WILL BE MADE. A NUMBER OF BIOLOGICAL ENDPOINTS WILL BE MEASURED TO DEFINE THE HOST DEFENSE MECHANISMS WHICH ARE MOST VULNERABLE TO AIR POLLUTANT EXPOSURE. ENDPOINTS WILL INCLUDE THE INFECTIVITY MODEL (WITH BOTH BACTERIA AND VIRUS), PULMONARY BACTERICIDAL ACTIVITY, ALVEOLAR MACROPHAGE FUNCTION, PULMONARY MORPHOLOGY, IMMUNE RESPONSE, HEMATOLOGY AND CHEMICAL CHEMIST

**PROJECT: 01405-CYANIDE FROM COKE MAKING AND BLAST FURNACE WASTEWATERS

STARTING/ COMPLETION DATE : 08/78 - 08/80 : FUNDING : ESTIMATED - FY78 / $ 19645
TASK CODE=F610C-347 **EPA=R805807 ** (GRANT) PRIOR FY /

EPA OFFICER.: RC MCCRILLIS EPA/IERL - RTP
INVESTIGATOR.: DJ SPOTTISWOOD MICHIGAN TECH UNIV METALLURG ENG DEPT
GW LUMER MICHIGAN TECH UNIV METALLURG ENG DEPT
MILESTONES...: 08/79 -IDENTIFY INTERFERENCES, CONSTRUCT LAB SCALE SYSTEM
08/80 -COMPLETE LAB SCALE TESTS, COMPLETE PILOT PLANT DESIGN
PLAN ID.....: (AP=610C)(OU=B118) MATERIALS PRODUCTION, INDUSTRIAL PT. SOURCES (WATER)
FINAL OUTPUT.: IDENTIFICATION OF PROCESS TO ENABLE STEEL INDUSTRY 0023
TO MEET OR EXCEED GUIDELINES FOR CYANIDE ION & CYAN 0023
RELATED SPECIES IN COKE MAKING & BLAST FURNACE WAST 0023
MANDATE.....: 30-99 ICAL/CHEMICAL WASTE WATER TREATMENT 0023
CURR. RESULTS: IT IS POSSIBLE TO REACT CYANIDE ANIONS WITH LONG-CH 0023
CATIONIC MATERIALS. 0023
ORDIS CODES..: RECN=001405 SSIE=ZZ 190 EPA =R805807 TASK=F610C-347
ORD =RF10C30-3078 MAND=30-99 AP =610C
OU =R118 LABT=EMI

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
COMMENT.....: JOINTLY FUNDED WITH AMERICAN IRON & STEEL INST. 0023
ABSTRACT.....: OBJECTIVE/APPROACH: IN THIS PROJECT, IT IS PLANNED TO DEVELOP A PROCESS FOR THE REMOVAL OF CYANIDE, FERROCYANIDE, AND THIOCYANATE IONS FROM COKE MAKING AND BLAST FURNACE WASTE WATERS. THE PROCESS IS BASED ON THE EXTRACTION OF THESE IONS BY A TERTIARY OR QUATERNARY AMINE, FOLLOWED BY AN ION FLOTATION STEP TO REMOVE THE IONS AND EXTRACTANT FROM THE WATER. THE CHEMISTRY OF THE SYSTEM WILL BE STUDIED IN SIMULATED SOLUTIONS AND ULTIMATELY IN REAL PLANT WASTE WATERS. TESTS WILL BE UNDERTAKEN TO DETERMINE THE OPERATING PARAMETERS REQUIRED FOR DESIGN OF A PILOT PLANT. WASTE WATERS PRODUCED IN THE COKE MAKING OPERATION CONTAIN CYANIDE AND CYANIDE RELATED SPECIES, PHENOL, AMMONIA, SULFIDE, TARS AND OIL, AND SUSPENDED SOLIDS. IN BLAST FURNACE OPERATIONS, THE WASTE WATER FROM THE OFF-GAS SCRUBBING OPERATION CONTAINS SIGNIFICANT AMOUNTS OF CYANIDES, PHENOL, AMMONIA, SULFIDE AND SUSPENDED SOLIDS. THE AMOUNT AND NATURE OF EACH CONTAMINANT VARIES WITH THE OPERATION OF A PARTICULAR PLANT, WITH VARIATIONS IN RAW MATERIALS, AND FROM PLANT TO PLANT. FINAL OUTPUTS: IDENTIFICATION OF A PROCESS THAT WILL ENABLE THE STEEL INDUSTRY TO MEET OR EXCEED IN A COST EFFECTIVE MANNER BATEA EFFLUENT LIMITATION GUIDELINES FOR CYANIDE ION AND CYANIDE RELATED SPECIES IN COKE MAKING AND BLAST FURNACE WASTEWATERS. RESULTS TO DATE: PRELIMINARY TESTS HAVE SHOWN THAT IT IS POSSIBLE TO REACT THE CYANIDE ANIONS WITH LONG-CHAIN CATIONIC MATERIALS SUCH AS AMINES TO PRODUCE EITHER SOLIDS OR WATER-IMMISCIBLE LIQUIDS THAT CAN BE SEPARATED USING FLOTATION TECHNOLOGY. THIS EFFORT IS NOW DIRECTED TOWARDS REFINING THESE RESULTS AND TO DEVELOPING PARAMETERS FOR THE LAB SCALE EXTRACTION EQUIPMENT.

**PROJECT: 01115-A STUDY OF THE DISTRIBUTION AND HEALTH EFFECTS OF GIARDIA LAMBLIA IN DOMESTIC WATER SUPPLY
STARTING/ COMPLETION DATE : 04/78 - 04/80 : FUNDING : ESTIMATED - FY78 / $ 77000
TASK CODE=D614B-011A **EPA=R805809-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: W JAKUBOWSKI EPA/HERL - CINC
INVESTIGATOR.: F FROST STATE HEALTH DIV LD-11 SOC/HLTH SERVICES DEPT
J DALING STATE HEALTH DIV LD-11 SOC/HLTH SERVICES DEPT
H LEICHTY STATE HEALTH DIV LD-11 SOC/HLTH SERVICES DEPT
MILESTONES...: 04/79 -INTERIM REPORT
04/80 -FINAL REPORT
PLAN ID.....: (AP-614B)(DU-C110) WATER SUPPLY - HEALTH EFFECTS RESEARCH
MANDATE.....: 10-13 SOLID WASTE DISPOSAL ACT 0005
30-99 EMIOLOGY, MICROBIOLOGY 0005
CURR. RESULTS: SEVERAL SURFACE WATER SUPPLIES IDENTIFIED AS GIARDIA CONTAMINATED. 0005 TASK-D614B-011A
ORDIS CODES..: RECN-001115 SSIE-GMA 5377 EPA -R805809-01
ORD -RD10H30-5078 MAND-10-13 MAND-30-99
AP -614B DU -C110 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THIS PROPOSAL SEEKS SUPPORT FOR CONTINUATION OF A PILOT RESEARCH EFFORT BEGUN BY THE STATE OF WASHINGTON. THE EFFORTS GREW OUT OF AN OUTBREAK OF GIARDIASIS IN CAMAS, WASHINGTON IN 1976. THE PROPOSAL SEEKS TO DETERMINE THE DISTRIBUTION OF GIARDIA LAMBLIA IN DOMESTIC WATER SUPPLY AND WHETHER HEALTH EFFECTS OF GIARDIA CONTAMINATED WATER CAN BE IDENTIFIED. THE PILOT PROJECT HAS BEEN DONE IN COOPERATION WITH DR. WALT JAKUBOWSKI OF HERL, CINCINNATI. THE PROPOSAL SEEKS TO ESTABLISH A STATEWIDE CASE REPORTING SYSTEM FOR LABORATORY CONFIRMED GIARDIA INFECTIONS USING OUR PILOT MODEL OF LABORATORY REPORTING AND PATIENT FOLLOW-UP. IT ALSO SEEKS TO CONTINUE USE OF COMMERCIAL TRAPPERS TO SUBMIT STOOL SPECIMENS FROM TRAPPED WATER MAMMALS. THIRDLY, IT WILL USE AN EPA DEVELOPED FILTER FOR IDENTIFYING GIARDIA CONTAMINATED SURFACE WATER USED AS A SOURCE OF DRINKING WATER. TO DATE SEVERAL SURFACE WATER SUPPLIES HAVE BEEN IDENTIFIED AS GIARDIA CONTAMINATED. CASE FOLLOW-UP SUGGESTS THAT ALTHOUGH MANY GIARDIASIS CASES CAN BE LINKED TO CONSUMPTION OF UNTREATED SURFACE WATER, A NUMBER OF CASES CANNOT BE EXPLAINED BY OBVIOUS SOURCES OF INFECTION. UNTIL THE CASE REPORTED IS INITIATED STATEWIDE, THE INTERPRETATION OF THE RESULTS IS LIMITED.

**PROJECT: 01810-KINETICS AND MECHANISMS OF NITRATE FORMATION IN PHOTOCHEMICAL SMOG

STARTING/ COMPLETION DATE : 01/78 - 04/81 : FUNDING : ESTIMATED - FY78 / $ 60000
TASK CODE=G603A-AC-23 **EPA=R805812-01 ** (GRANT) PRIOR FY /

EPA OFFICER,: JJ RUFALINI EPA/ESRL - RTP
INVESTIGATOR,: CW SPICER BATTELLE MEMORIAL INST
DW JOSEPH BATTELLE MEMORIAL INST
GM SVERDRUP BATTELLE MEMORIAL INST
MILESTONES,..: 02/82 -ORD REPORT ON NITRATE FORMATION
PLAN ID.....: (AP=603A)(DU=A125) ATMOSPHERIC PROCESSES AND EFFECTS
MANDATE.....: 10-99 C,NOX STANDARDS
ORDIS CODES,.: RECN-001810 SSIE-GMA 4908 EPA -R805812-01 TASK-G603A-AC-23
ORD -RG10830-1078 LABN-G603A-AC-23 MAND-10-99
AP -603A DU -A125 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OVERALL OBJECTIVE OF THIS PROGRAM IS TO ELUCIDATE THE KINETICS AND MECHANISMS OF GASEOUS AND PARTICULATE NITRATE FORMATION IN PHOTOCHEMICAL SMOG. THIS OBJECTIVE WILL BE MET THROUGH CONTROLLED LABORATORY SMOG CHAMBER EXPERIMENTATION AND KINETIC MODELLING. THE LARGE BODY OF EXPERIMENTAL DATA WHICH THIS PROGRAM WILL PROVIDE WILL BE USED TO DEFINE THE RELATIONSHIPS BETWEEN NOX REACTION PRODUCTS AND THEIR GASEOUS PRECURSORS. THESE DATA WILL BE USEFUL IN DESIGNING POTENTIALLY NECESSARY FUTURE CONTROL STRATEGIES AND IN TESTING AND VALIDATING KINETIC MODELS OF PHOTOCHEMICAL SMOG.

**PROJECT: 00117-DEVELOPMENT OF OIL IN WATER MONITOR

STARTING/ COMPLETION DATE : 05/78 - 05/80 : FUNDING : ESTIMATED - FY78 / $ 50990
TASK CODE=A625C-51 **EPA=R805817-01 ** (GRANT) PRIOR FY77 / $ 45000

EPA OFFICER,: FK KAWAHARA EPA/EMSL - CINC
INVESTIGATOR,: MS SILVUS SOUTHWEST RESEARCH INST
MILESTONES...: 11/76 -RECEIVED MATERIAL, EXPERIMENTATION WITH COATINGS AND WITH GLASS
06/77 -DEVELOPED ACCEPTABLE ORGANOPHILIC COATING ON GLASS FIBER
12/77 -FOUND DETECTION LIMIT (75 PPM) OF OIL-IN-WATER
03/78 -DEMONSTRATE FEASIBILITY OF NOVEL CONCEPT FOR MONITORING OIL IN WA TER
05/78 -DETECTION LIMIT = 25 TO 50 PPM OF OIL IN WATER
07/78 -PATENT APPLICATION AND FILING BEING CONSIDERED
05/79 -DELIVER PROTOTYPE, MONITOR, SENSITIVE TO 50 PPM & READY FOR TEST
05/79 -FIELD TESTING FINALIZED
PLAN ID.....: (AP=625C)(OU=N140) ENERGY-RELATED POLLUTANT & EFFECTS MONITORING, METHODS & TECH. 0003
MANDATE.....: 20-99 GY RELATED, DC 0003
CURR. RESULTS: CONCEPT DEM. TO BE POSSIBLE AND DEMO. WAS REPORTED 0003
SYMPOSIUM ON ENERGY AND R & D FOR CONTINENTAL MARGI
AT USC, LOS ANGELES.

ORDIS CODES..: RECN=000117 SSIE-GMA 5089 EPA -R805817-01 TASK-A625C-51
ORD -RA10830-2078 MAND-20-99 AP -625C
OU -N140 LABT-MTS

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: TO DEVELOP AN OIL-IN-WATER DEVICE THAT WILL PROVIDE MONITORING OF WASTEWATERS FROM TREATMENT PROCESSES INVOLVED IN COAL LIQUEFACTION, SHALE OIL RECOVERY PLANTS, AND IN PETROLEUM REFINERIES. WITH THE COMBINED USE OF REVERSE PHASE LIQUID CHROMATOGRAPHY AND OPTICAL FIBER TECHNOLOGY AND USING A SUITABLE OPTICAL SENSOR, TRACES OF OIL IN WATER WILL BE MONITORED AT 75 PPM LEVEL AND GREATER. CURRENT PLANS ARE TO DESIGN, FABRICATE, AND TEST A PROTOTYPE INSTRUMENT USING THE ORGANOPHILICALLY TREATED GLASS FIBER FOR THE DETERMINATION OF SUSPENDED HYDROCARBONS IN WATER. THE CONCEPT WAS DEMONSTRATED TO BE FEASIBLE, AND ITS DEMONSTRATION WAS REPORTED AT THE SYMPOSIUM ON ENERGY RESEARCH AND DEVELOPMENT FOR CONTINENTAL MARGINS, AT UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES, CALIFORNIA, MARCH 8, 1978.

**PROJECT: 03089-IDENTIFICATION OF NON-VOLATILE ORGANIC COMPOUNDS FORMED DURING WATER CHLORINATION
STARTING/ COMPLETION DATE : 03/74 - 08/79 : FUNDING : ESTIMATED - FY78 / $ 66100
TASK CODE=K614D-134 **EPA=R805822-01 ** (GRANT) PRIOR FY77 / $ 105500
EPA OFFICER.: AW GARRISON EPA/ERL - ATHENS
INVESTIGATOR.: WH GLAZE NORTH TEXAS STATE UNIV INST OF APPLIED SCI
MILESTONES...: 10/75 -REPORT: FORMATION OF ORGANO-CL COMPDS. FROM CHLOR. OF MUN. SEC. EFFLUENT
10/76 -REPORT ON TOTAL ORGANIC CHLORINE (TOCL) METHOD
08/79 -REPORT ON CHLORINATED NON-VOLATILE COMPOUNDS IN CHLORINATED WATER
PLAN ID.....: (AP-614D)(DU-C110) WATER SUPPLY - IDENTIFICATION & MEASUREMENT
FINAL OUTPUT.: REPORT ON ANALYTICAL METHODS FOR CHLORINATED ORGANI 0026
POUNDS IN MUNICIPAL WASTEWATERS AND OTHER WATERS AN 0026
REPORT ON IDENTIFICATION OF COMPOUNDS FORMED DURNIN 0026
WATER CHLORINATION. 0026
MANDATE.....: 10-13 SOLID WASTE DISPOSAL ACT
CURR. RESULTS: METHODS HAVE BEEN DEVELOPED FOR MEASUREMENT OF TOTA 0026
HALOGEN IN MUNICIPAL WASTEWATERS. 0026
ORDIS CODES..: RECN-003089 SSIE-GMA 4002 1 EPA -R805822-01 TASK-K614D-134
ORD -RK10851-1078 MAND-10-13 AP -614D
DU -C110 LAST-ALW
PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
COMMENT.....: I--25 (OTHER)--POLLUTANT IDENTIFICATION (SOURCE 0026
CHARACTERIZATION) 0026
K7138 - $6100, 0026
K614D - $60000 0026
RENEWAL GRANT TO R803007-03 0026

ABSTRACT.....: OBJECTIVE/APPROACH: THE OBJECTIVE OF THIS PROJECT IS TO DETERMINE UNDER WHAT CONDITIONS AND TO WHAT EXTENT NEW ORGANIC COMPOUNDS ARE PRODUCED BY THE CHLORINATION OF NATURAL WATERS, MUNICIPAL AND INDUSTRIAL WASTEWATERS, AND OTHER SPECIAL WASTE PRODUCTS SUCH AS SEPTAGES AND SLUDGES. THE PRINCIPAL FOCUS OF THIS WORK, AS OPPOSED TO EARLIER STUDIES, WILL BE IN THE EXAMINATION OF HIGHER MOLECULAR WEIGHT SPECIES AND OTHER NON-VOLATILE COMPOUNDS WHICH ARE NOT AMENABLE TO ANALYSIS BY GAS CHROMATOGRAPY. PARTICULAR ATTENTION WILL BE GIVEN TO THE FOLLOWING ELEMENTS OF THE PROJECT: (A) DEVELOPMENT OF A GENERALIZED SCHEME FOR THE SEPARATION OF NON-VOLATILE SOLUTES IN THESE TYPES OF WATER ACCORDING TO MOLECULAR SIZE, POLARITY, AND CHEMICAL CLASS (IF POSSIBLE); (B) SPECTROSCOPIC EXAMINATION (MS, IR, UV, NMR, ETC.) OF THESE FRACTIONATED SOLUTES TO DETERMINE THEIR CHEMICAL COMPOSITION AND MOLECULAR ARCHITECTURE; (C) DEVELOPMENT OF RELIABLE AND EFFICIENT HPLC METHODS FOR THE SEPARATION AND ANALYSIS OF THE NON-VOLATILE SPECIES IN WATER ACCORDING TO MOLECULAR CLASS. IN THE LATTER REGARD, SPECIAL EMPHASIS WILL BE PLACED ON SIZE EXCLUSION HPLC WITH ELEMENT-SPECIFIC DETECTORS. FINAL OUTPUT: REPORT ON ANALYTICAL METHODS FOR CHLORINATED ORGANIC COMPOUNDS IN MUNICIPAL WASTEWATERS AND OTHER WATERS AND REPORT ON IDENTIFICATION OF COMPOUNDS FORMED DURING WATER CHLORINATION. RESULTS TO DATE: METHODS HAVE BEEN DEVELOPED FOR MEASUREMENT OF TOTAL ORGANIC HALOGEN IN MUNICIPAL WASTEWATERS. GC-MS TECHNIQUES HAVE BEEN APPLIED TO THE IDENTIFICATION OF ABOUT 50 CHLORINATED ORGANICS FORMED DURING CHLORINE TREATMENT OF MUNICIPAL WASTEWATERS.

**PROJECT: 00558-DEMONSTRATION OF THE THERMOPHILIC AEROBIC-ANAEROBIC DIGESTION PROCESS AT THE CITY OF HAGERSTOWN
STARTING/ COMPLETION DATE : 08/78 - 02/80 : FUNDING : ESTIMATED - FY78 / $ 331705
TASK CODE=C6118-0014 **EPA=S805823-01 ** (GRANT) PRIOR FY /

EPA OFFICER,: BV SALOTTO
INVESTIGATOR,: MG MCGAUHEY
LC MATSCH
EPA/MERL - CINC
HAGERSTOWN DEPT WATER POLL
UNION CARBIDE CORP

MILESTONES...: 01/80 -FINAL REPORT
PLAN ID.....: (AP-6118)(DU-B106) WASTEWATER TREATMENT TECHNOLOGY PROGRAMS 0012
MANDATE.....: 40-99
ORDIS CODES..: NECN-000558 SSIE-GMA 5114 EPA -S805823-01 TASK-C6118-0014
ORD -RC10H30-4078 MAND-40-99 AP -6118
DU -B106 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE CITY OF HAGERSTOWN WASTEWATER POLLUTION CONTROL PLANT PROPOSES TO MAKE AVAILABLE ITS ANAEROBIC DIGESTERS, SLUDGE HANDLING FACILITIES, AND MANPOWER IN A RESEARCH STUDY TO IMPROVE SLUDGE DIGESTION AND INCREASE GAS PRODUCTION. THE UNIQUE FEATURE OF THE RESEARCH STUDY WILL COMBINE OPERATION OF AN EXPERIMENTAL AEROBIC DIGESTER WITH AN EXISTING CONVENTIONAL ANAEROBIC DIGESTER. THE PROPOSED PROGRAM IS DESIGNED TO DETERMINE THE OPERATIONAL CHARACTERISTICS AND ADVANTAGES OF THE COMBINED SYSTEM. THE OBJECTIVES OF THE STUDY INCLUDE AN ASSESSMENT OR DETERMINATION OF THE FOLLOWING: 1. COMPARISON OF METHANE GAS PRODUCTION OVER THAT PRODUCED FROM CONVENTIONAL ANAEROBIC TREATMENT. 2. MEASURING THE EFFICIENCY OF THE PROCESS IN KILLING PATHOGENIC ORGANISMS AND VIRUS. 3. DETERMINING THE MAXIMUM TEMPERATURE RISE IN THE AEROBIC DIGESTER TO CONTROL THE TEMPERATURE OF THE ANAEROBIC DIGESTER. 4. DETERMINE THE DEWATERING CHARACTERISTICS OF THE FINAL DIGESTED SLUDGE. 5. COMPARING DIGESTER EFFICIENCY OF THE COMBINED PROCESS WITH CONVENTIONAL ANAEROBIC PROCESS

**PROJECT: 01814-PAN CONCENTRATION IN AMBIENT AIR IN NEW JERSEY

STARTING/ COMPLETION DATE : 03/78 - 02/80 : FUNDING : ESTIMATED - FY78 / $ 29000
TASK CODE=G603A-AC-30 **EPA=R805827-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: JJ BUFALINI EPA/ESRL - RTP
INVESTIGATOR.: EG BRENNAN RUTGERS STATE UNIV OF NJ DEPT OF PLANT PATHOLOGY
MILESTONES...: 07/80 -ORD FINAL REPORT
PLAN ID.....: (AP-603A)(DU-A125) ATMOSPHERIC PROCESSES AND EFFECTS
MANDATE.....: 10-02 CLEAN AIR ACT
ORDIS CODES..: RECN-001814 SSIE-GMA 4902 EPA -R805827-01 TASK-G603A-AC-30
ORD -RG10830-1078 MAND-10-02 AP -603A
DU -A125 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: PRECURSORS OF PHOTOCHEMICAL SMOG, NAMELY THE HYDROCARBONS AND OXIDES OF NITROGEN ARE ROUTINELY MEASURED BY LABORATORIES THROUGHOUT THE U.S. INFORMATION ABOUT HYDROCARBON COMPOSITION HAS BEEN ACCUMULATED IN SOME DETAIL. WITH THE EXCEPTION OF OZONE, HOWEVER, LITTLE INFORMATION IS AVAILABLE ON AMBIENT CONCENTRATIONS OF SECONDARY PRODUCTS OF PHOTOCHEMICAL SMOG. DESPITE THE EVIDENCE OBTAINED FROM CHAMBER STUDIES THAT A SIGNIFICANT AMOUNT OF PEROXYACETYLNITRATE (PAN) IS FORMED IN THE IRRADIATION OF HYDROCARBONS AND NITROGEN OXIDES, PAN HAS NOT BEEN SYSTEMATICALLY MEASURED IN AMBIENT AIR IN THE EASTERN PART OF U.S. WHILE CALIFORNIA HAS BEEN THE SCENE OF SOME TESTING, THE SITUATION MAY OR MAY NOT BE COMPARABLE IN THE EAST. TO MAKE THAT DETERMINATION IS PRECISELY THE GOAL OF THIS PROPOSAL. IN ORDER TO ACCOMPLISH THIS GOAL, WE HAVE SPECIFIED FOUR OBJECTIVES: 1. AMBIENT AIR WILL BE MONITORED DAILY FOR PAN FOR A PERIOD OF 2 YEARS ON COOK COLLEGE CAMPUS, NEW BRUNSWICK, NJ, A SUBURBAN LOCATION SITUATED BETWEEN THE NEW YORK AND PHILADELPHIA METROPOLITAN AREAS. 2. PAN CONCENTRATIONS WILL BE EXAMINED WITH RESPECT TO WIND SPEED AND DIRECTION AND WITH BAROMETRIC PRESSURE, DATA WHICH ARE OBTAINED DAILY AT AN OFFICIAL WEATHER STATION ON COOK CAMPUS. 3. PAN CONCENTRATIONS WILL BE EXAMINED WITH RESPECT TO CONCENTRATIONS OF HYDROCARBONS AND NO2, ITS PRECURSORS, AND ALSO TO OZONE AND POLLUTANTS THAT WILL BE MEASURED DAILY BY THE NJ DEPARTMENT OF ENVIRONMENTAL PROTECTION AT COOK CAMPUS. 4. PAN-SENSITIVE PLANT SPECIES WILL BE GROWN AS BIOLOGICAL MONITORS, INASMUCH AS THEY EXHIBIT A SPECIFIC TYPE OF F

*PROJECT: 02545-NEOPLASIA DISTRIBUTIONS AND RADIOEMISSION DENSITY IN THE PORTLAND METRO AREA

STARTING/ COMPLETION DATE : 07/78 - 07/80 : FUNDING : ESTIMATED - FY78 / $ 56000
TASK CODE=H601F-8774 **EPA=R805832-01 ** (GRANT) PRIOR FY /

EPA OFFICER,: GS WILKINSON EPA/HERL - RTP
INVESTIGATOR,: WE MORTON OREGON STATE HIGHER ED SYS HLTH SCI CTR
DS PHILLIPS OREGON STATE HIGHER ED SYS HLTH SCI CTR
WL RISE OREGON STATE HIGHER ED SYS HLTH SCI CTR
MILESTONES,..: 01/79 -ACQUISITION OF RADIOEMISSION SURVEY RESULTS
03/79 -COMPLETION OF MORTALITY DATA COLLECTION AND CODING
07/79 -REPORT RESULTS OF MORTALITY SURVEY
10/79 -COMPLETE HISTORICAL LOG OF BROADCAST SOURCES
01/80 -COMPLETION OF INCIDENCE DATA COLLECTION
03/80 -ANALYZE AND REPORT RESULTS OF INCIDENCE SURVEY
07/80 -FINAL REPORT: CANCER INCIDENCE AND EXPOSURE TO RADIOEMISSIONS
PLAN ID.....: (AP=601F)(OU=A105) CONTRIBUTION OF ENVIRONMENTAL FACTORS TO CANCER IN HUMANS
MANDATE.....: 30-99 EMIOLOGY 0007
CURR. RESULTS: PRELIM STUDY OF UTERINE ADENOCARCINOMA INCIDENCE 0007
IN PORTLAND METRO AREA SHOWED EXCESSIVE RISK IN REG 0007
WHERE MOST RADIOEMISSION SOURCES LOCATED. 0007
ORDIS CODES,..: RECN-002545 SSIE-GMA 5167 EPA -R805832-01 TASK-H601F-8774
ORD -RH10830-3078 MAND-30-99 AP -601F
OU -A105 LABT-HEE

PROJ STATUS,..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVES: DETERMINATION OF CORRELATION BETWEEN FREQUENCY-SPECIFIC RADIOEMISSION DENSITIES AND SELECTED NEOPLASM INCIDENCE AND MORTALITY RATES BY CENSUS TRACT IN THE COUNTIES COMPRISING THE PORTLAND METROPOLITAN AERA. APPROACH: WE SHALL DEVELOP A COMMUNITY CANCER DATA BASE FOR THE FOLLOWING CANCERS: UTERINE ADENOCARCINOMA (1973-1777 INCIDENCE DATA), PANCREATIC CARCINOMA (1963-1977 MORTALITY DATA), LEUKEMIAS (1963-1977 INCIDENCE AND MORTALITY DATA), OAT CELL CARCINOMA OF THE LUNG (1963-1977 INCIDENCE DATA) AND CARCINOMA OF THE BREAST (1963-1977 MORTALITY DATA AND 1973-1977 INCIDENCE DATA). THE RADIOEMISSION SURVEY DATA HAVE BEEN COLLECTED BY E. P. A. OFFICE OF RADIATION PROGRAMS AND WILL BE CORRELATED WITH THE CANCER RATES (STANDARDIZED FOR AGE AND SOCIOECONOMIC DIFFERENCES), TAKING INTO ACCOUNT SUCH OTHER EPIDEMIOLOGIC VARIABLES AS SEX, OCCUPATION, SMOKING BEHAVIOR,FAMILY HISTORY AND USE OF ESTROGENIC DRUGS. RESULTS TO DATE: PRELIMINARY STUDY OF UTERINE ADENOCARCINOMA INCIDENCE DURING 1968-1972 IN THE PORTLAND METRO AREA SHOWED A PECULIAR GEOGRAPHIC CLUSTERING OF EXCESSIVE RISK IN THE REGION WHERE MOST OF THE COMMERCIAL RADIOEMISSION SOURCES ARE LOCATED. THERE MAY WELL BE ANOTHER EXPLANATION FOR THIS PHENOMENON, BUT THE PRESENCE OR ABSENCE OF A CORRELATION WITH RADIOEMISSION DENSITY NEEDS TO BE DEMONSTRATED IN A MANNER THAT WOULD MINIMIZE THE CHANCE OF A FALSE POSITIVE CORRELATION.

PROJECT: 00280-THE DEVELOPMENT OF AN ACTIVATED CARBON PROCESS FOR THE REMOVAL OF CADMIUM (II) FROM INDUSTRIAL WASTEWATERS
STARTING/ COMPLETION DATE : 08/78 - 05/80 : FUNDING : ESTIMATED - FY78 / $ 50000
TASK CODE=B610B-730 **EPA=R805835-01 ** (GRANT) PRIOR FY /
EPA OFFICER,: MK STINSON EPA/IERL - CINC
INVESTIGATOR,: CP HUANG UNIV OF DELAWARE SCH OF ENG
MILESTONES...: 05/80 -FINAL REPORT ON USE OF ACTIVATED CARBON FOR REMOVAL OF CD (II)
PLAN ID.....: (AP-610B)(DU-B118) MATERIALS PROCESSING, INDUSTRIAL PT. SOURCES (WATER)
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-000280 SSIE-ZZ 436 EPA -R805835-01 TASK-B610B-730
ORD -RH10C30-1078 MAND-10-01 AP -610B
DU -B118 LABT-EMI

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVE OF THIS PROPOSED RESEARCH IS TO DEVELOP AN ACTIVATED CARBON PROCESS FOR THE REMOVAL OF CADMIUM (II) FROM INDUSTRIAL WASTEWATERS. THREE MAJOR EXPERIMENTS ARE TO BE CONDUCTED IN THE LABORATORY: (1) BATCH MODE ADSORPTION EXPERIMENTS, (2) BATCH MODE REGENERATION EXPERIMENT, AND (3) COLUMN OPERATION. DURING BATCH ADSORPTION EXPERIMENTS, THE EFFECTS OF PH, CARBON DOSE AND TOTAL CADMIUM CONCENTRATION CARBON TYPE, THE PRESENCE OF FOREIGN CHEMICALS ON CD (II) ADSORPTION AND THE REVERSIBILITY IN ADSORPTION WILL BE STUDIED. CHEMICAL REGENERATION WITH STRONG ACID AND/OR SOLVENT AND LOW TEMPERATURE COOKING WILL BE STUDIED AS REGENERATION METHODS. THE EFFICIENCY OF REGENERATION WILL BE DETERMINED AND THE STRATEGY OF REGENERATION WILL BE ESTABLISHED. THE INFORMATION OBTAINED DURING BATCH MODE ADSORPTION AND REGENERATION EXPERIMENT WILL BE APPLIED TO COLUMN OPERATING TO DEVELOP A PROTOTYPE PROCESS FOR CD

388A

PROJECT: 03563-EFFECTS OF INCREASED SEDIMENT LOADINGS CAUSED BY HUMAN ACTIVITIES ON ALASKAN WETLAND VEGETATION
STARTING/ COMPLETION DATE : 05/78 - 04/80 : FUNDING : ESTIMATED - FY78 / $ 76638
TASK CODE=M608C-217 **EPA=R805837-01 ** (GRANT) PRIOR FY /
EPA OFFICER,: JL GALLAGHER EPA/ERL - CORVALLIS
INVESTIGATOR,: AG VANDERVALK IOWA UNIV OF SCI & TECH
MILESTONES...: 04/80 -FINAL REPORT
PLAN ID.....: (AP-608C)(DU-B115) MARINE & ESTUARINE ECOLOGICAL PROCESSESS & EFFECTS (18A 608)
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-003563 SSIE-GMA 5032 EPA -R805837-01 TASK-M608C-217
ORD -RM10B30-1078 MAND-10-01 AP -60BC
DU -B115 LABT-MEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVES ARE 1) TO SURVEY AND EXAMINE EXPERIMENTALLY THE EFFECT OF INCREASED TURBIDITY AND SEDIMENT LOADING CAUSED BY ROAD CONSTRUCTION ON THE COMPOSITION OF ALASKAN WETLAND VEGETATION, AND 2) TO EXPERIMENTALLY STUDY THE POTENTIAL FOR RECOVERY OF ALASKAN WETLAND VEGETATION TYPES FROM DISTURBANCE CAUSED BY INCREASED SEDIMENT LOADINGS. THE STUDY WILL INVOLVE FOUR SEPARATE APPROACHES TO THE STUDY OF SEDIMENT EFFECTS: 1) A SURVEY OF DAMAGE DONE TO ALASKAN WETLANDS AS A RESULT OF ROAD CONSTRUCTION; 2) AN EXPERIMENTAL STUDY OF THE EFFECTS OF DIFFERENT SEDIMENT LOADINGS ON SELECTED WETLAND TYPES; 3) A SURVEY OF SEED BANKS OF ALASKAN WETLAND VEGETATION; AND 4) A STUDY OF THE EFFECTS OF SEDIMENT DEPTH ON SEED GERMINATION AND SEEDLING GROWTH OF SOME SELECTED DOMI

*PROJECT: 03564-DEVELOPMENT AND VALIDATION OF THE ECHINODERM FERTILIZATION BIOASSAY FOR TESTING TOXIC SUBSTANCES
STARTING/ COMPLETION DATE : 08/78 - 08/79 : FUNDING : ESTIMATED - FY78 / $ 99957
TASK CODE=M608C-218 **EPA-R805839-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: RC SWARTZ EPA/ERL - CORVALLIS
INVESTIGATOR.: GJ STOBER UNIV OF WASHINGTON SCH OF FISHERIES
MILESTONES...: 07/79 -FINAL REPORT
PLAN ID.....: (AP-608C)(OU-B115) MARINE & ESTUARINE ECOLOGICAL PROCESSESS & EFFECTS (IBA 608)
MANDATE.....: 10-03 TOXIC SUBSTANCES CONTROL ACT
ORDIS CODES..: RECN-003564 SSIE-ZZ 278 EPA -R805839-01 TASK-M608C-218
ORD -RM10C30-1078 MAND-10-03 AP -608C
OU -B115 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE PRIMARY OBJECTIVE IS THE DEVELOPMENT OF AN ECHINODERM FERTILIZATION BIOASSAY FOR ROUTINE TESTING OF TOXIC SUBSTANCES. THIS WILL INCLUDE: 1) DEFINITION OF THE REQUIRED EQUIPMENT AND METHODS; 2) DETERMINATION OF THE INTERACTION OF SALINITY, DISSOLVED OXYGEN, TEMPERATURE AND PH ON TEST RESULTS; 3) EFFECTS OF VARIATION IN SPERM AND EGG DENSITIES; 4) DETERMINATION OF THE BEST STATISTICAL ANALYSIS; 5) COMPARISON OF SPERM SENSITIVITY OF SEA URCHINS AND SAND DOLLARS; AND 6) VALIDATION OF FERTILIZATION RESULTS BY COMPARISON WITH CHRONIC FISH AND 48 HOUR EMBRYO BI

**PROJECT: 01004-MECHANISMS OF INTESTINAL CADMIUM ABSORPTION IN RATS
STARTING/ COMPLETION DATE : 05/78 - 05/81 : FUNDING : ESTIMATED - FY78 / $ 50316
TASK CODE=D607 -012 **EPA-R805840-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: MJ WIESTER EPA/HERL - CINC
INVESTIGATOR.: EC FOULKES UNIV OF CINCINNATI CIV & ENV ENG DEPT
MILESTONES...: 05/79 -REPORT: MECHANISMS INVOLVED IN INTESTINAL ABSORPTION OF CD IN RAT
PLAN ID.....: (AP-607)(OU-B103) HEALTH AND ECOLOGICAL EFFECTS- HEALTH EFFECTS 0020
MANDATE.....: 30-99 IOLOGY, BIOCHEMISTRY
ORDIS CODES..: RECN-001004 SSIE-GMA 5142 EPA -R805840-01 TASK-D607 -012
ORD -RD10B30-3078 MAND-30-99 AP -607
OU -B103 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: IT IS THE AIM OF THIS WORK TO ELUCIDATE MECHANISMS INVOLVED IN INTESTINAL ABSORPTION OF CADMIUM IN RATS. SUCH KNOWLEDGE IS IMPORTANT BOTH AS CONTRIBUTION TO THE UNDERSTANDING OF TRANSMURAL TRANSPORT OF HEAVY METALS IN GENERAL, AS WELL AS IN THE EVALUATION OF THE TOXICOLOGICAL SIGNIFICANCE OF DIFFERENT DIETARY CADMIUM LEVELS. FOR THIS PURPOSE WE PLAN TO DETERMINE KINETICS OF CADMIUM ABSORPTION FROM ISOLATED SEGMENTS OF JEJUNUM IN SITU. THE KINETIC TREATMENT WILL BE BASED ON A 3-COMPARTMENT CATENARY MODEL WHICH SHOULD PERMIT IDENTIFICATION OF SITE AND NATURE OF ACTION OF DIETARY CONSTITUENTS KNOWN TO AFFECT CADMIUM TRANSPORT. SUCH STUDIES ARE PLANNED FOR GROUPS OF RATS MAINTAINED ON DIFFERENT DIETS IN ORDER TO GAIN A MORE COMPLETE PICTURE OF CADMIUM ABSORPTION UNDER VARIOUS PHYSIOLOGICAL CONDITIONS.

**PROJECT: 01833-OUTDOOR SMOG CHAMBER EXPERIMENTS TO TEST PHOTOCHEMICAL MODELS

STARTING/ COMPLETION DATE : 04/78 - 04/81 : FUNDING : ESTIMATED - FY78 / $ 60000
TASK CODE=G603A-AD-18 **EPA-R805843-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: MC DUDGE EPA/ESRL - RTP
INVESTIGATOR.: HE JEFFRIES UNIV OF NORTH CAROLINA SCH OF PUBLIC HLTH
RM KAMENS UNIV OF NORTH CAROLINA SCH OF PUBLIC HLTH
MILESTONES...: 10/81 -ORD FINAL REPORT
PLAN ID.....: (AP-603A)(DU-A125) ATMOSPHERIC PROCESSES AND EFFECTS
MANDATE.....: 10-02 CLEAN AIR ACT
CURR. RESULTS: ANALYSIS OF THREE DUAL RUNS GIVEN; THIS COUPLED WIT 0034
MODELLING EFFORTS, INDICATE THAT FORMALDEHYDE NOX S 0034
NOT CLEARLY UNDERSTOOD. 0034
ORDIS CODES..: RECN-001833 SSIE-GMA 4904 EPA -R805843-01 TASK-G603A-AD-18
ORD -RG10830-1078 LABN-G603A-AD-04 MAND-10-02
AP -603A DU -A125 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE PURPOSE OF THIS RESEARCH IS TO MEASURE SMOG CHAMBER REACTANT AND PRODUCT CONCENTRATIONS IN OUTDOOR CHAMBERS AS A FUNCTION OF TIME IN SPECIFIC CHEMICAL SYSTEMS WHICH ARE OF IMMEDIATE INTEREST TO MATHEMATICAL MODELLERS. SMOG CHAMBER EXPERIMENTS WILL BE CONDUCTED IN THE UNC DUAL OUTDOOR CHAMBER AND WILL HAVE THE FEATURE OF REALISTIC DIURNAL LIGHT, TEMPERATURE, AND WATER VAPOR. DIFFERENT HYDROCARBON NOX SYSTEMS (FORMALDEHYDE-NOX, PROPYLENE-NOX, BUTANE-NOX, TOLUENE-NOX, AND ETHYLENE-NOX) WILL BE RUN SIMULTANEOUSLY IN THE TWO CHAMBER HALVES. THIS WILL GIVE MODELLERS THE OPPORTUNITY TO SIMULATE TWO DIFFERENT HYDROCARBON/NO SYSTEMS UNDER THE SAME VARIABLE LIGHT AND TEMPERATURE CONDITIONS; THIS SITUATION IS NOT AVAILABLE IN EXISTING SMOG CHAMBER DATA BASES. AN ANALYSIS OF THREE DUAL RUNS, WHICH INCLUDED FORMALDEHYDE-NOX, ACETALDEHYDE-NOX, AND PROPYLENE-NOX SYSTEMS IS GIVEN, ALTHOUGH THESE EXPERIMENTS WERE PRELIMINARY IN NATURE WE COULD ACCOUNT FOR ABOUT 85% OF THE INITIAL CARBON AND 85% OF THE INITIAL NITROGEN AS PRODUCT SPECIES IN PROPYLENE RUNS. ACETALDEHYDE AND FORMALDEHYDE NITROGEN BALANCES WERE MUCH WORSE. THIS COUPLED WITH OUR OWN MODELLING EFFORTS, INDICATE THAT FORMALDEHYDE NOX SYSTEMS ARE NOT CLEARLY UNDERSTOOD. IT IS THE HOPE THAT THIS RESEARCH WILL PROVIDE ENOUGH RUNS WITH SUFFICIENT PRODUCT INFORMATION (LIKE CO, H2O2, PAN, NITRIC ACID, FORMALDEHYDE AND ACETALDEHYDE), SO THAT MODELS FOR THE HYDROCARBON/NOX SYSTEMS OF CONCERN CAN BE DEVELOPED AND VALIDATED FOR A VARIETY OF DIFFERENT SOLAR RADIATION AND TEMPERATURE CONDITIONS.

**PROJECT: 01123-CANCER INCIDENCE IN RELATION TO ASBESTOS IN DRINKING WATER IN THE PUGET SOUND REGION
STARTING/ COMPLETION DATE : 04/78 - 05/81 : FUNDING : ESTIMATED - FY78 / $ 88280
TASK CODE=D6148-016 **EPA=R805846-01 ** (GRANT) PRIOR FY /

EPA OFFICER.:	M KANAREK	EPA/HERL - CINC	
INVESTIGATOR.:	L POLISSA	FRED HUTCHINSON RES CTR	PROG IN EPIDEM & BIOSTATS
	DB THOMAS	FRED HUTCHINSON RES CTR	PROG IN EPIDEM & BIOSTATS
	ES BOATMAN	UNIV OF WASHINGTON	ZOOL DEPT
	W MINUS	STATE DEPT SOC/HLTH SERV	

MILESTONES...: 04/78 -START
01/79 -REPORT ON CANCER INCIDENCE AND MORTALITY RATES
01/80 -REPORT ON OCCUPATIONALLY LINKED CANCER
04/81 -REPORT ON CASE CONTROL STUDY

PLAN ID.....: (AP-6148)(OU-C110) WATER SUPPLY - HEALTH EFFECTS RESEARCH
MANDATE.....: 10-13 SOLID WASTE DISPOSAL ACT
ORDIS CODES..: RECN-001123 SSIE-GMA 5388 EPA -R805846-01 TASK-D6148-016
ORD -RD10830-1078 MAND-10-13 AP -6148
OU -C110 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH

ABSTRACT.....: CANCER MORTALITY AND INCIDENCE DATA WILL BE USED TO DETERMINE IF THERE IS AN ELEVATED CANCER RISK FOR THOSE PERSONS LIVING IN AREAS OF THE PUGET SOUND REGION WITH A HIGH CONCENTRATION OF ASBESTOS IN THE WATER SUPPLY. DATA WILL INCLUDE DEATH CERTIFICATES, INCIDENCE RECORDS FROM SEER POPULATION-BASED TUMOR REGISTRY, CENSUS TABULATIONS, AND WATER ANALYSES. STATISTICAL METHODS WILL INCLUDE CALCULATIONS OF RATES AND RELATIVE RISKS. A CASE-CONTROL STUDY MAY BE UNDERTAKEN IF INITIAL RESULTS INDICATE THE DEISIRABILITY OF THIS APPROACH.

**PROJECT: 01408-IMPROVED BIOLOGICAL WASTE TREATMENT FOR AMMONIA REDUCTION IN STEEL INDUSTRY WASTEWATER

STARTING/ COMPLETION DATE : 08/78 - 05/79 : FUNDING : ESTIMATED - FY78 / $ 9185
TASK CODE=F610C-351 **EPA=R805847 ** (GRANT) PRIOR FY /

EPA OFFICER,: J RUPPERSBERGE EPA/IERL - RTP
INVESTIGATOR,: RD NEUFELD UNIV OF PITTSBURGH ENG & APPLIED SCI/CIV ENG DEPT
MILESTONES,..: 11/78 -ESTAB. SUSPENDED FILM BIO-REACTORS AT STEADY STATE
12/78 -EVALUATE SYSTEM UPSET DUE TO SHOCK LOAD OF ONE PARAMETER
03/79 -COMPLETE SURVEY OF UPSETS AT FULL SCALE WASTEWATER PLANTS
03/79 -COMPLETE EVALUATION OF LAB SYSTEM SHOCK LOADING UPSETS
05/79 -COMPLETE FINAL REPORT ON NITRIFICATION PROCESS UPSETS
PLAN ID.....: (AP-610C)(OU-8118) MATERIALS PRODUCTION, INDUSTRIAL PT. SOURCES (WATER)
FINAL OUTPUT,: INFORMATION CONCERNING CAUSES OF CURRENT UPSETS IN 0023
BIOLOGIAL TREATMENT OF COKE PLANT WASTEWATER 0023
MANDATE.....: 10-99 A 0023
ORDIS CODES,.: RECN-001408 SSIE-ZZ 187 EPA -R805847 TASK-F610C-351
ORD -RF10C30-1078 MAND-10-99 AP -610C
OU -8118 LABT-EMI

PROJ STATUS,.: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVE/APPROACH: THE OBJECTIVE OF THIS RESEARCH IS TO INVESTIGATE CAUSES OF BIOLOGICAL PROCESS INSTABILITY AS CURRENTLY OBSERVED BY STEEL INDUSTRY WASTEWATER TREATMENT FACILITIES. SEVERAL SUSPENDED FILM BIOREACTORS CONTAINING PREVIOUSLY GROWN CULTURES OF MIXED NITRIFYING ORGANISMS WILL BE DEVELOPED. CHANGES FROM AN INITIAL STEADY STATE WILL BE IMPOSED BY ALTERING ALKALINITY, PH, AND PHENOLIC CONTENT OF FEED SUBSTRATE PROPERTIES. OUTPUTS ARE TARGETED TO INCLUDE QUALIFICATION OF THE DEVIATION OF NITRIFICATION BIOKINETIC PARAMETERS DUE TO SUCH ALTERATIONS IN SUBSTRATE COMPOSITION. IT IS ANTICIPATED THAT THIS RESEARCH SHALL LEAD TO A BETTER UNDERSTANDING OF THE CONTROL AND DESIGN OF NITRIFICATION FACILITIES AS APPLIED TO COKE PLANT EFFLUENTS. FINAL OUTPUTS: THE INFORMATION DEVELOPED BY THIS PROJECT SHOULD PROVIDE A BETTER UNDERSTANDING OF THE CAUSES OF CURRENT UPSETS IN BIOLOGICAL TREATMENT OF COKE PLANT WASTEWATER.

**PROJECT: 00578-BIODEGRADATION OF PRIORITY POLLUTANTS IN WASTEWATER TREATMENT SYSTEMS

STARTING/ COMPLETION DATE : 05/78 - 05/80 : FUNDING : ESTIMATED - FY78 / $ 144470
TASK CODE=C6118-0040 **EPA=R805858-01 ** (GRANT) PRIOR FY /

EPA OFFICER.:	MM TABAK	EPA/MERL - CINC	
INVESTIGATOR.:	EJ KIRSCH	PURDUE UNIV	SCH OF ENG/NUCLEAR ENG
	RF WUKASCH	PURDUE UNIV	SCH OF ENG/NUCLEAR ENG
	CP GRADY	PURDUE UNIV	SCH OF ENG/NUCLEAR ENG
MILESTONES...:	05/79 -ANNUAL PROGRESS REPORT		
	06/80 -FINAL REPORT		
PLAN ID.....:	(AP-6118)(DU-8106) WASTEWATER TREATMENT TECHNOLOGY PROGRAMS		
MANDATE.....:	30-99 EGRADION OF POLLUTANTS, MICROBIAL CHEMISTRY 0013		
ORDIS CODES..:	RECN-000578	SSIE-GMA 5113	EPA -R805858-01 TASK-C6118-0040
	ORD -RC10H30-3078	MAND-30-99	AP -6118
	DU -8106	LABT-ALM	

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH

ABSTRACT.....: THE STUDIES WILL BE UNDERTAKEN TO DETERMINE THE BIODEGRADABILITY OF A NUMBER OF REPRESENTATIVE PRIORITY ORGANIC POLLUTANTS IN AEROBIC AND ANAEROBIC EXPERIMENTAL LABORATORY SYSTEMS. THE OBJECTIVES ARE TO OBTAIN EXPERIMENTAL DATA WHICH WILL ALLOW A PREDICTION OF THE FATE OF MANY OF THESE TOXIC AND/OR HAZARDOUS ORGANIC COMPOUNDS IN BIOLOGICAL WASTE TREATMENT SYSTEMS AND FROM WHICH ULTIMATE BIO-OXIDATION PATTERNS COULD BE DEVELOPED THROUGH A CORRELATION BETWEEN MOLECULAR STRUCTURE AND BIODEGRADATION RATES. THE FIRST YEAR WILL BE SPENT ON DEVELOPING A PRELIMINARY LABORATORY SCREENING PROCEDURE FOR DETERMINING THE EFFECT OF AND RELATING THE SPECIFIC GROWTH RATES OF SLUDGE MICROORGANISMS (RELATED TO SOLIDS RETENTION TIME, SRT VALUES) TO THE DEGREE OF BIODEGRADABILITY OF THE ORGANIC SUBSTRATE. THE AEROBIC SYSTEM WILL UTILIZE SINGLE-PASS, CONTINUOUS FLOW STIRRED TANK REACTORS, IN WHICH THE SRT WILL BE CONTROLLED BY THE FEED FLOW RATE AND THE REACTOR VOLUME. THE ANAEROBIC PROCESS, INVOLVING DIGESTION OF PRIMARY SLUDGE AND SECONDARY WASTE ACTIVATED SLUDGE TO CONVERT ORGANIC SOLIDS TO INSOLUBLE GAS (I.E. METHANE), WILL PERMIT THE OBSERVATION OF BOTH THE DECOMPOSITION OF THE SUBSTRATE AND THE DELETERIOUS EFFECTS OF PRIORITY POLLUTANTS ON THE ANAEROBIC DIGESTION. SUBSEQUENTLY, THE RATES OF BIOCHEMICAL OXIDATION OF THE ORGANIC COMPOUNDS, EXTENT OF MINERALIZATION OF THE SUBSTRATE MOLECULE, AND THE DETERMINATION OF WHETHER THE DEGRADATION IS PRIMARY OR ULTIMATE, WILL BE DETERMINED IN TAGGED CARBON EXPERIMENTS OR WITH UNLABELLED POLLUTANTS, USING WARBURG RESPIROMETRY. ULTIMATELY, THE CORRELATION OF THE CHEMICAL STRUCTURE WITH RATE OF BIOCHEMICAL OXIDATION WILL BE DEVELOPED AS A LONG TERM GOAL OF THE PROJECT.

**PROJECT: 03215-A MICROCOSM MATRIX AS A TEST SYSTEM FOR POLLUTANTS - AN APPRAISAL USING A TOXIC SUBSTANCE
STARTING/ COMPLETION DATE : 05/78 - 05/80 : FUNDING : ESTIMATED - FY78 / $ 64000
TASK CODE=K7608-342 **EPA=R805860-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: DL BROCKWAY EPA/ERL - ATHENS
INVESTIGATOR.: EP ODUM UNIV OF GEORGIA
PF HENDRIX UNIV OF GEORGIA
CL THOMAS UNIV OF GEORGIA

MILESTONES...: 12/78 -MASTERS THESIS
09/80 -FINAL REPORT: A MICROCOSM MATRIX AS A TEST SYSTEM FOR POLL

PLAN ID.....: (AP=7608)(OU=L135) EXPOSURE FOR SOIL & WATER ROUTES

FINAL OUTPUT.: REPORT EVALUATING USEFULNESS OF MICROCOSM MATRICES 0031
AS TEST SYSTEMS FOR POTENTIAL ENV. CONTAMINANTS. 0031

MANDATE.....: 30-99 OCOSM TECHNIQUE 0031

CURR. RESULTS: 1ST PHASE EXPERIMENTS IN PROGRESS, PLANNING FOR MAJ 0031
PORTION OF STUDY. 0031

ORDIS CODES..: RECN=003215 SSIE=GMA 5038 EPA =R=805860-01 TASK=K7608-342
ORD =RK10830-3078 MAND=30-99 AP =7608
OU =L135 LABT=ALM

PROJ STATUS..: PROJECT=ACTIVE DATA=ORIGINAL CATEGORY=RESEARCH

ABSTRACT.....: A HOLISTIC APPROACH WILL BE USED TO ASSESS THE EFFECTS OF A TOXIC SUBSTANCE ON ECOLOGICAL PROCESSES IN FRESHWATER LABORATORY MICROCOSMS. TWO FACTORIAL EXPERIMENTAL DESIGNS WILL BE USED: 1) A 4 X 4 MATRIX OF STATIC MICROCOSMS WILL BE TREATED WITH NUTRIENT AND POLLUTANT CONCENTRATIONS ALONG TWO GRADIENTS; 2) A 3/X 4 MATRIX OF FLOW-THROUGH MICROCOSMS WILL BE TREATED WITH SEDIMENT DENSITY AND POLLUTANT CONCENTRATIONS ALONG TWO GRADIENTS. SEVERAL VARIABLES WILL BE MEASURED IN THE MICROCOSMS TO DESCRIBE THE STATE OF THE SYSTEMS AT DISCRETE POINTS IN TIME IN TERMS OF THREE INTEGRATIVE SYSTEM PARAMETERS IN TOTAL METABOLIC ACTIVITY (ENERGY FLOW), STRUCTURAL COMPLEXITY, AND NUTRIENT FLUX. DATA FROM BOTH EXPERIMENTS WILL BE USED TO EVALUATE THE USEFULNESS OF MICROCOSM MATRICES AS TEST SYSTEMS FOR POTENTIAL ENVIRONMENTAL CONTAMINANTS. THE FINAL OUTPUT WILL BE A REPORT EVALUATING THE USEFULNESS OF MICROCOSM MATRICES AS TEST SYSTEMS FOR POTENTIAL ENVIRONMENTAL CONTAMINANTS. THE FIRST PHASE EXPERIMENTS ARE IN PROGRESS AS IS THE PLANNING FOR THE MAJOR PORTION OF THE STUDY.

**PROJECT: 03346-DEVELOPMENT OF A NATIONAL LIBRARY CENTER FOR GROUND WATER INFORMATION

STARTING/ COMPLETION DATE : 05/78 - 04/81 : FUNDING : ESTIMATED - FY78 / $ 100000
TASK CODE=L614C-18 **EPA=R805863-01 ** (GRANT) PRIOR FY /

EPA OFFICER,: WJ DUNLAP EPA/ERL - ADA
INVESTIGATOR,: JH LEHR NATL WAT WELL ASSN RES FAC
T GASS NATL WAT WELL ASSN RES FAC
M EBERLE NATL WAT WELL ASSN RES FAC
J HUNT NATL WAT WELL ASSN RES FAC
G PALMER NATL WAT WELL ASSN RES FAC
MILESTONES...: 06/79 -SET UP DESCRIPTORS AND COMPUTERIZED SEARCH SYSTEM
06/80 -TEST, IMPROVE, AND ADD TO LIBRARY BASE
06/81 -TEST, IMPROVE, AND ADD TO LIBRARY BASE
PLAN ID.....: (AP-614C)(DU-C110) WATER SUPPLY - GROUNDWATER MANAGEMENT
MANDATE.....: 20-99 WATER WELL ASSN, WORTHINGTON, OH 0036
CURR. RESULTS: EXTENSIVE LITERATURE SEARCH. 0036
ORDIS CODES..: REC#-003346 SSIE-ZZ 263 EPA -R805863-01 TASK-L614C-18
ORD -RL10C30-2078 MAND-20-99 AP -614C
DU -C110 LAB-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OWING TO THE SEVERE DOCUMENTATION PROBLEMS EXISTING IN THE AREA OF GROUND WATER TECHNOLOGY, THE NATIONAL WATER WELL ASSOCIATION PROPOSES TO AUGMENT ITS EXISTING LIBRARY TO INCLUDE ALL SIGNIFICANT LITERATURE CONCERNING AQUIFERS, GROUND WATER HYDRAULICS, GROUND WATER POLLUTION AND CONTROL, GROUND WATER RESOURCE MANAGEMENT, AND WATER WELL CONSTRUCTION. THE HARD-COPY COLLECTION OF THE LIBRARY WILL BE CATALOGED BY MEANS OF A SPECIALLY DESIGNED COMPUTER SYSTEM; IN ADDITION, THIS COMPUTER SYSTEM WILL BE USED TO INDEX IMPORTANT PERIODICALS IN THE GROUND WATER FIELD, TO STORE BIBLIOGRAPHIC INFORMATION ON LITERATURE IN RELATED AREAS OF STUDY, AND TO INTERFACE WITH OTHER DATA BASES. ONCE ESTABLISHED, THE LIBRARY WILL SERVE BOTH GOVERNMENT PERSONNEL AND PRIVATE INDIVIDUALS THROUGH LITERATURE SEARCH AND MATERALS LOAN PROGRAMS. VARIOUS PUBLIC-AWARENESS PROGRAMS WILL BE INITIATED DURING THE LIBRARY'S FIRST FEW MONTHS IN ORDER TO BRING THESE SERVICES TO THE ATTENTION OF THE POTENTIAL COMMUNITY OF USERS. THIS PROJECT, INITIATED MAY 1, 1978, IS CURRENTLY INVOLVED IN AN EXTENSIVE LITERATURE SEARCH.

**PROJECT: 00581-DEVELOPMENT OF A TENTATIVE STANDARD FOR EVALUATING OXYGEN TRANSFER

STARTING/ COMPLETION DATE : 03/78 - 03/80 : FUNDING : ESTIMATED - FY78 / $ 70000
TASK CODE=C611B-0044 **EPA=R805868 ** (GRANT) PRIOR FY /

EPA OFFICER,: RC BRENNER EPA/MERL - CINC
INVESTIGATOR,: RB MORGAN AMERICAN SOC OF CIVIL ENG RES & STANDARDS SERVS
WC BOYLE UNIV OF WISCONSIN CIV & ENV ENG
MILESTONES...: 04/78 -SYMPOSIUM/WORKSHOP HELD
12/79 -DRAFT STANDARD COMPLETED
PLAN ID.....: (AP=611B)(DU=R106) WASTEWATER TREATMENT TECHNOLOGY PROGRAMS
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-000581 SSIE-GMA 5111 EPA -R805868 TASK-C611B-0044
ORD -RC10B30-1078 MAND-10-01 AP -611B
DU -R106 LABT-ALA

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: ASCE HAS ESTABLISHED A VOLUNTARY SUBCOMMITTEE ON OXYGEN TRANSFER TO DEVELOP A TENTATIVE STANDARD FOR THE EVALUATION OF OXYGEN TRANSFER EQUIPMENT IN WATER AND WASTEWATER. THROUGH THE UTILIZATION OF WORKSHOPS, INTERNAL DISCUSSIONS, AND SELECTED LABORATORY RESEARCH STUDIES, THE SUBCOMMITTEE WILL COMPREHENSIVELY ASSESS THE MAJOR FACTORS AFFECTING AND THE AREAS OF AGREEMENT AND DISAGREEMENT IN EVALUATING OXYGEN TRANSFER. WELL-KNOWN EXPERTS IN THE FIELD WILL BE RETAINED BY ASCE AS PART OF THE GRANT PROJECT TO REVIEW THE OUTPUT OF THESE ACTIVITIES, CONDENSE THE WORK OF THE SUBCOMMITTE INTO A DRAFT TENTATIVE STANDARD, AND RECOMMEND PROCEDURES FOR VERIFICATION OF THE TENTATIVE STANDARD WHICH IF CARRIED OUT AND DATA INCORPORATED WOULD RESULT IN A CONSENSUS STANDARD. THE DRAFT STANDARD WILL BE THOROUGHLY CRITIQUED BY THE SUBCOMMITTEE PRIOR TO FINALIZATION OF THE EPA REPORT AND PRESENTATION OF THE TENTATIVE STAND

**PROJECT: 03565-FIELD STUDIES OF COOK INLET WETLAND, ALASKA - SECONDARY PRODUCTIVITY

STARTING/ COMPLETION DATE : 08/78 - 10/79 : FUNDING : ESTIMATED - FY78 / $ 55000
TASK CODE=M608C-220 **EPA=R805870-01 ** (GRANT) PRIOR FY /

EPA OFFICER,: HV KIRBY EPA/ERL - CORVALLIS
INVESTIGATOR,: FW RAHE UNIV OF IDAHO SCH OF LETTERS & SCI
MILESTONES...: 10/79 -FINAL REPORT
PLAN ID.....: (AP=608C)(DU=R115) MARINE & ESTUARINE ECOLOGICAL PROCESSESS & EFFECTS (IPA 608)
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-003565 SSIE-ZZ 27 EPA -R805870-01 TASK-M608C-220
ORD -RM10C30-1078 MAND-10-01 AP -608C
DU -R115 LABT-MEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THIS WILL BE A STUDY OF SECONDARY PRODUCTIVITY IN THE POTTER MARSH ECOSYSTEM. THE KEY QUESTION TO BE ADDRESSED IS "WHAT HAPPENS TO THE PRIMARY PRODUCTION." HOWEVER, IN ORDER TO ANSWER THIS QUESTION, OTHER MORE SPECIFIC QUESTIONS MUST BE ADDRESSED: 1) WHAT IS THE APPROXIMATE NATURE OF THE WETLANDS FOOD WEB; 2) WHAT ARE THE PRINCIPAL ENERGY TRANSFER PATHWAYS WITHIN THE COMMUNITY; AND 3) WHAT CONTRIBUTIONS DO THE WETLANDS PROVIDE TO ADJACENT ECOSYSTEMS (FOR EXAMPLE, NURSERY GROUND FOR ESTUARINE INVERTEBRATES OR FISH; ROOSTING, FEEDING OR BREEDING AREAS FOR SHOREBIRDS AND WATERFOWL)? SO THAT EACH OF THESE QUESTIONS IS PROPERLY ADDRESSED, A FIELD PROGRAM HAS BEEN DESIGNED TO PROVIDE DATA ON SPECIES DISTRIBUTION AND ABUNDANCES, HABITAT PREFERENCE AND UTILIZATION, AND DIETARY REQUIREMENTS. FAUNAL GROUPS FOR WHICH SPECIFIC DATA WILL BE COLLECTED INCLUDE ZOOPLANKTON, BENTHOS, INSECTS, FISH, BIRDS AND MAMMALS.

**PROJECT: 01271-HISTOCHEMISTRY AND QUANTIFICATION OF MUCOUS ELEMENTS IN EPA ("CINCINNATI") BEAGLES
STARTING/ COMPLETION DATE : 05/78 - 05/79 : FUNDING : ESTIMATED - FY78 / $ 37922
TASK CODE=D625F-0038 **EPA=R805871-01 ** (GRANT) PRIOR FY /

EPA OFFICER,: J ORTHOEFER EPA/HERL - CINC
INVESTIGATOR,: EB WHEELDON UNIV OF CALIFORNIA
WS TYLER UNIV OF CALIFORNIA
DL DUNGWORTH UNIV OF CALIFORNIA
MILESTONES...: 07/78 -FINAL REPORT
PLAN ID.....: (AP-625F)(DO-N140) AIR, WATER AND MULTI-ROUTE EXPOSURE & THEIR EFFECTS (HEALTH)
MANDATE.....: 10-02 CLEAN AIR ACT
40-99
000A
ORDIS CODES..: RECN-001271 SSIE-ZZ 729 EPA -R805871-01 TASK-D625F-0038
ORD -RD10C30-5078 MAND-10-02 MAND-40-99
AP -625F DO -N140 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE EPA "CINCINNATI BEAGLES" WERE A GROUP OF 104 BEAGLE DOGS DIVIDED INTO 8 GROUPS AND EXPOSED TO A VARIETY OF ATMOSPHERIC POLLUTANTS (SINGLY AND IN COMBINATION) AT AMBIENT LEVELS FOR A PERIOD OF FIVE YEARS (1965-69) FOLLOWED BY A 3 YEAR PERIOD OF RECOVERY. (REF: EPA CONTRACT #68-02-0323-MAINTENANCE AND OBSERVATION OF CHRONIC STUDY OF THE EFFECTS OF AUTO EXHAUST AND OTHER POLLUTANTS IN FEMALE BEAGLES.) TO DATE EXTENSIVE STUDY OF THESE ANIMALS HAS INCLUDED PHYSIOLOGIC, HEMATOLOGIC, AND MORPHOLOGIC EXAMINATION. IN PARTICULAR, POST MORTEM MORPHOLOGIC EXAMINATION HAS INCLUDED BOTH SCANNING AND TRANSMISSION ELECTRON MICROSCOPY. SO FAR THE MAIN THRUST OF THE MORPHOLOGIC STUDY HAS CENTERED ON THE TERMINAL AIRWAYS AND THE AIRSPACES. THE LARGE AIRWAYS OF THESE ANIMALS ARE PRESERVED AND CURRENTLY STORED AT THE CALIFORNIA PRIMATE RESEARCH CENTER. THE MUCUS-SECRETING ELEMENTS OF THESE AIRWAYS WOULD BE EVALUATED IN AN ATTEMPT TO DELINEATE DETECTABLE CHANGES IN SECRETIONS DUE TO THE POLLUTANTS. BY SUBJECTING THIS MATERIAL TO A RANGE OF ESTABLISHED HISTOCHEMICAL TECHNIQUES, A PARTIAL CHARACTERIZATION OF THE MUCOSUBSTANCES AND A COMPARISON OF THE DIFFERENT EXPOSURE GROUPS WOULD BE POSSIBLE, GIVING INFORMATION ON QUALITATIVE SHIFTS IN RESPIRATORY TRACT SECRETIONS. IN ADDITION, BY USING AUTOMATED IMAGE ANALYZING TECHNIQUES IN COMBINATION WITH THESE STAINS, IT IS HOPED TO QUANTIFY MUCOSUBSTANCES IN THE DIFFERENT EXPOSURE GROUPS: QUANTIFICATION OF BRONCHIAL MUCOUS GLAND MASS WOULD DETECT HYPERTROPHY OF T

**PROJECT: 01056-MUTAGEN EXCRETION BY INDIVIDUALS CONSUMING WATERS FROM MISSISSIPPI RIVER AND NON-MISSISSIPPI RIVER SOURCES
STARTING/ COMPLETION DATE : 09/78 - 08/80 : FUNDING : ESTIMATED - FY78 / $ 107923
TASK CODE=D6078-004 **EPA=R805872-01 ** (GRANT) PRIOR FY /
EPA OFFICER,: CF CHAUN EPA/HERL - CINC
INVESTIGATOR,: W PELON LOUISIANA STATE UNIV SCH OF MED/MICROBIOL DEPT
MILESTONES...: 12/79 -PRELIMINARY PROGRESS REPORT.
08/80 -FINAL REPORT.
PLAN ID.....: (AP-6078)(OU-B103) CHARACTERIZATION & TESTING OF WATER & HAZARDOUS SUBSTANCES
MANDATE.....: 10-13 SOLID WASTE DISPOSAL ACT
ORDIS CODES..: RECN-001056 SSIE-GMA 5385 EPA -R805872-01 TASK-D607R-004
ORD -RD10830-1078 MAND-10-13 AP -6078
OU -R103 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: SEVERAL STUDIES HAVE SHOWN THE PRESENCE OF NUMEROUS ORGANIC COMPOUNDS SOME CONSIDERED TO BE CARCINOGENIC, IN NEW ORLEANS FINISHED WATER, SAMPLES OF SIMILAR WATER ALSO WERE FOUND TO BE MUTAGENIC TO MUTANT STRAINS OF SALMONELLA TYPHIMURIUM, THE URINES FROM TWO POPULATIONS WILL BE COLLECTED, CONCENTRATED BY A RECENTLY DESCRIBED TECHNIQUE AND ASSAYED FOR THE PRESENCE OF MUTAGENS USING THE HISTIDINE-DEPENDENT MUTANT STRAINS OF SALMONELLA TYPHIMURIUM, THE FINISHED WATER NORMALLY CONSUMED BY ONE GROUP IS OBTAINED FROM A MISSISSIPPI RAW WATER SOURCE, WHILE THE SECOND POPULATION, SOME 200 MILES FROM THE MISSISSIPPI RIVER, DRINK FINISHED WATER FROM DEEP WELL SOURCES. A TOTAL OF 400 INDIVIDUALS WILL COMPRISE THE STUDY POPULATION, AND A TOTAL OF 3,200 URINE SAMPLES, COLLECTED AT DIFFERENT TIMES OF THE YEAR, WILL BE CONCENTRATED AND ASSAYED. A SMALLER MORE CONTROLLED STUDY ALSO WILL BE CONDUCTED IF THE DATA OBTAINED APPEAR ENCOURAGING. TAKEN INTO ACCOUNT WILL BE THE INFLUENCES OF THE INDIVIDUALS' SMOKING HABITS (TOBACCO OR OTHER), AND USE OF ME

**PROJECT: 00105-PRESERVATION AND DETERMINATION OF CR(III) AND/OR CR(VI) IN WATERS

STARTING/ COMPLETION DATE : 06/78 - 06/80 : FUNDING : ESTIMATED - FY78 / $ 43732
TASK CODE=A6228-47 **EPA=R805877-01 ** (GRANT) PRIOR FY /
EPA OFFICER,: ME GALES EPA/EMSL - CINC
INVESTIGATOR,: BT DUHART UNIV OF ARKANSAS UNDERGRADUATE SCH
MILESTONES...: 12/78 -DETERMINE THE EFFECT OF TIME AND PH ON THE PRESERVATION OF CHROMI
05/79 -DETERMINE EFFECTS OF TEMPERATURE
03/80 -EVALUATE THE USEFULNESS OF ENDICO SAMPLING DEVICES
PLAN ID.....: (AP-6228)(OU-H115) MINORITY INSTITUTIONS RESEARCH SUPPORT
MANDATE.....: 20-99 ARKANSAS/PINE BLUFF 0003
ORDIS CODES..: RECN-000105 SSIE-ZZ 227 EPA -R805877-01 TASK-A6228-47
ORD -RA10C30-2078 LABN-A622 -047 MAND-20-99
AP -6228 OU -H115 LABT-MTS

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: IN TRANSPORTING AND LATER DETERMINATION OF WATER SAMPLES IN THE LABORATORY, THE CONCENTRATION OF THE CHROMIUM IONS CHANGES. THIS INVESTIGATION INVOLVES: (1) DETERMINING THE EFFECT WITH TIME AND VARYING PH OF SAMPLE PRESERVATIVES ON TRIVALENT AND HEXAVALENT CHROMIUM IN POTABLE, NATURAL, AND WASTE WATER; (2) OBSERVATION OF THE EFFECT OF TEMPERATURE AND TYPES OF SAMPLE CONTAINERS ON THE PRESERVATIONS OF CR(III), AND CR(VI); AND (3) EVALUATION OF A METRI-DISC TO SEPARATE CR(III) AND CR(VI). THE ANALYTICAL TECHNIQUES USED WILL BE ATOMIC ABSORPTION SPECTRUSCOPY AND DIFFERENTIAL PULSE POLAROGRAPHY. SAMPLES WILL BE MEASURED BEFORE AND AFTER SPIKING WITH REAGENTS. PERIODIC MEASUREMENTS WILL ALSO BE OBTAINED TO INDICATE THE DEGREE OF PRESERVATION.

**PROJECT: 03566-INFLUENCE OF WETLANDS ON THE METABOLIC AND NUTRITIONAL STATUS OF DOWNSTREAM AQUATIC ECOSYSTEM

STARTING/ COMPLETION DATE : 08/78 - 08/79 : FUNDING : ESTIMATED - FY78 / $ 18134
TASK CODE=M608C-221 **EPA=R805881-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: W SANVILLE EPA/ERL - CORVALLIS
INVESTIGATOR.: MM BRINSON UNIV OF NORTH CAROLINA EAST CAROLINA UNIV
MILESTONES...: 08/79 -FINAL REPORT
PLAN ID.....: (AP-608C)(DU-B115) MARINE & ESTUARINE ECOLOGICAL PROCESSESS & EFFECTS (IBA 608)
FINAL OUTPUT.: REPORT DETERMINING IMPACT OF FRESHWATER WETLAND SYS 0042
ON ESTUARINE ALGAL PRIMARY PRODUCTIVITY. 0042
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-003566 SSIE-GMA 5028 EPA -R805881-01 TASK-M608C-221
ORD -RM10B30-1078 MAND-10-01 AP -608C
DU -B115 LABT-NEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVE: DETERMINE HOW WETLAND ECOSYSTEMS ALTER WATER QUALITY AND THUS INFLUENCE METABOLIC AND NUTRITIONAL STATUS OF DOWNSTREAM AQUATIC ECOSYSTEMS. FINAL OUTPUT: REPORT THAT WILL DETERMINE THE IMPACT OF FRESHWATER WETLAND SYSTEMS ON ESTUARINE ALGAL PRIMARY PRODUCTIVITY. INFORMATION IS NEEDED FOR UNDERSTANDING WATER QUALITY CHANGES OCCURRING IN WETLANDS AND WILL AID IN THE PREDICTION OF THE EFFECTS OF WETLAND MANIPULATIONS.

**PROJECT: 03783-CHARACTERIZATION OF DREDGED MATERIALS DISPOSAL AREAS IN THE GREAT LAKES

STARTING/ COMPLETION DATE : 03/78 - 12/79 : FUNDING : ESTIMATED - FY78 / $ 150000
TASK CODE=N769 -042 **EPA=R805885-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: MD MULLIN EPA/ERL - DULUTH
INVESTIGATOR.: RA SWEENEY STATE UNIV OF NEW YORK GREAT LAKES LAB
MILESTONES...: 12/79 -FINAL REPORT
PLAN ID.....: (AP-769)(DU-) * NO TEXT FOUND **
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-003783 SSIE-ZZ 257 EPA -R805885-01 TASK-N769 -042
ORD -RN10C30-1078 MAND-10-01 AP -769
PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVES: ASCERTAIN THE NATURE AND EXTENT THAT OPEN-LAKE DEPOSITION OF DREDGED MATERIAS HAS ALTERED SEDIMENT CHEMISTRY AND BENTHIC MACROINVERTEBRATES IN THE GREAT LAKES. THIRTY (30) DISPOSAL AREAS AND ADJACENT CONTROL SITES IN LAKES ERIE, ONTARIO, HURON, AND MICHIGAN WILL BE MONITORED (QUANT. AND QUAL. ANALYSIS) FOR SEDIMENT CHEMISTRY AND BENTHOS. SEDIMENT OXYGEN DEMAND AND THE PHYSICAL EXTENT OF THE DEPOSITION MOUND ALSO WILL BE MEASURED AT EACH SITE.

**PROJECT: 01384-KINETICS OF EVOLUTION OF SULFUR-BEARING GASES FROM BLAST FURNACE SLAGS

STARTING/ COMPLETION DATE : 07/77 - 08/79 : FUNDING : ESTIMATED - FY78 / $ 13200
TASK CODE=F604C-346 **EPA=R805886 ** (GRANT) PRIOR FY77 / $ 12100

EPA OFFICER.: RC MCCRILLIS EPA/IERL - RTP
INVESTIGATOR.: JF ELLIOTT MIT ELEC ENG DEPT
GJ YUREK MIT ELEC ENG DEPT
MILESTONES...: 07/77 -PROJECT START
07/78 -DEFINE FACTORS AFFECTING GENERATION OF SO2 AND CASO4
09/79 -DEFINE FACTORS AFFECTING GENERATION OF H2S AND SO2
10/79 -PUBLISH FINAL REPORT
PLAN ID.....: (AP-604C)(OU-A128) MATERIALS PRODUCTION, INDUSTRIAL PT. SOURCES (AIR)
FINAL OUTPUT.: DESIGN OF INDUSTRIAL PROCESSES FOR REMOVAL OF 0023
SULFUR-BEARING WASTEGASES FROM SLAG TREATMENT FACIL 0023
MANDATE.....: 30-99 ICAL REACTION KINETICS 0023
CURR. RESULTS: SOME PROCESSES INDICATED IN REACTION BETWEEN WATER 0023
VAPOR AND OXYGEN . 0023
ORDIS CODES..: RECN-001384 SSIE-ZZ 192 EPA -R805886 TASK-F604C-346
ORD -RF10C30-3078 MAND-30-99 AP -604C
OU -A128 LAST-EMI

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
COMMENT.....: GRANT JOINTLY FUNDED WITH AMERICAN IRON & STEEL INS 0023
ABSTRACT.....: OBJECTIVE/APPROACH: THE OBJECTIVE IS THE STUDY OF THE EVOLUTION OF SO2 AND H2S GASES FROM HOT METALLURGICAL SLAGS. THE APPROACH INVOLVES AN IN-DEPTH STUDY OF THE REACTIONS BETWEEN MOISTURE-BEARING GASES AND SULFUR-BEARING SLAGS AS INFLUENCED BY THE PRESENCE OF THE OXIDES OF THE COMMON TRANSITION ELEMENTS, SUCH AS IRON AND MANGANESE IN THE SLAG, BY GAS COMPOSITION, BY FLOW CONDITIONS OF THE GASES AND BY TEMPERATURE. FINAL OUTPUT: THE GOAL IS TO DETERMINE THE BASIC MECHANISMS OF THE REACTIONS TO PROVIDE INFORMATION THAT MAY BE USEFUL IN THE DESIGN OF INDUSTRIAL PROCESSES FOR THE REMOVAL OF SULFUR-BEARING WASTE GASES FROM THE EFFLUENT GASES OF SLAG TREATMENT FACILITIES. RESULTS TO DATE: WORK COMPLETED DURING THE PAST YEAR HAS INDICATED SOME OF THE PROCESSES INVOLVED IN THE OVERALL REACTION BETWEEN WATER VAPOR AND OXYGEN IN THE GASES AND SULFUR IN THE SLAG. THESE REACTIONS HAVE BEEN STUDIED UTILIZING AN APPARATUS DESIGNED AND BUILT DURING THIS TI

**PROJECT: 03417-AN ASSESSMENT OF PUBLIC AND PRIVATE BENEFITS OF ABATING POLLUTION
STEMMING FROM IRRIGATION RETURN FLOWS
STARTING/ COMPLETION DATE : 07/78 - 06/80 : FUNDING : ESTIMATED - FY78 / $ 48302
TASK CODE=L770A-1-51 **EPA=R805896-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: AG HURNSBY EPA/ERL - ADA
INVESTIGATOR.: NK WHITTLESEY WASHINGTON STATE UNIV SCH OF AGRIC
MILESTONES...: 12/80 -FINAL PROJECT REPORT
PLAN ID.....: (AP=770A)(DU=R133) IRRIGATED CROP PRODU[illegible]
MANDATE.....: 30-99 CULTURAL ECONOMICS 0039
CURR. RESULTS: SOME LETERATURE HAS BEEN REVIEWED 0039
ORDIS CODES..: RECN=003417 SSIE=ZZ 262 EPA =R805896-01 TASK=L770A-1-51
ORD =RL10C30-3078 MAND=30-99 AP =770A
DU =R133 LABT=ALN

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVES: TO DEVELOP CRITERIA FOR MEASUREMENT OF BENEFITS TO BE DERIVED FROM THE ABATEMENT OF POLLUTION FROM IRRIGATION RETURN FLOWS. EMPHASIS WILL BE GIVEN TO THE DEVELOPMENT OF A METHOD THAT CAN BE APPLIED TO ANY NONPOINT SOURCE POLLUTION PROBLEM. APPROACH: (A) REVIEW LITERATURE IN ALL RELATED FIELDS FOR RELEVANT THEORY, METHODOLOGY, AND RESEARCH EFFORTS THAT WOULD PROVIDE A SET OF CRITERIA FOR MEASURING THE BENEFITS OF POLLUTION ABATEMENT. (B) DEVELOP METHODOLOGY BASED ON THE BEST AVAILABLE SOCIAL CONCEPTS, PLANNING MODELS AND ECONOMIC THEORY FOR THE PURPOSE OF EVALUATING PUBLIC AND PRIVATE BENEFITS OF POLLUTION ABATEMENT. (C) APPLY METHODOLOGY IN ONE OR TWO TEST CASES IN THE PACIFIC NORTHWEST TO TEST AND DEMONSTRATE ITS VALUE. (D) TRANSLATE THE TECHNICAL METHODOLOGY INTO GUIDELINES AND PROCEDURES THAT CAN BE USED BY PUBLIC AGENCIES AND LOCAL POLICY MAKERS FACING PROBLEMS OF POLLUTION ABATEMENT. CURRENT PLANS: SOME LITERATURE HAS BEEN REVIEWED AND THIS WILL CONTINUE CONTINGENT UPON PROJECT FUNDING.

**PROJECT: 00789-REMOVAL OF NITRATE FROM CONTAMINATED WATER SUPPLIES FOR PUBLIC USE

STARTING/ COMPLETION DATE : 06/78 - 06/80 : FUNDING : ESTIMATED - FY78 / $ 187693
TASK CODE=C614A-062 **EPA=R805900-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: R LANCH EPA/MERL - CINC
INVESTIGATOR.: GA GUTER MCFARLAND MUTUAL WATER CO
E KARTINEN MCFARLAND MUTUAL WATER CO
K FRANK MCFARLAND MUTUAL WATER CO
MILESTONES...: 11/78 -DESIGN & FIELD TEST REVERSE OSMOSIS AND ION EXCHANGE
01/79 -OPERATE I.X.
03/79 -OPERATE R.O.
05/79 -OPERATE I.X. & R.O.
11/79 -OPERATE IN SYNTHETIC WATERS (3 SYSTEMS)
02/80 -LAB OPERATION R.O., I.X., R.O. & I.X.
03/80 -FINAL REPORT
PLAN ID.....: (AP=614A)(OU=C110) WATER SUPPLY - WATER TREATMENT & SYSTEMS
MANDATE.....: 10-13 SOLID WASTE DISPOSAL ACT
ORDIS CODES..: RECN=000789 SSIE=GMA 5096 EPA =R805900-01 TASK=C614A-062
ORD =RC10830-1078 LABN=C614A-0062 MAND=10-13
AP =614A OU =C110 LABT=ALN

PROJ STATUS..: PROJECT=ACTIVE DATA=ORIGINAL CATEGORY=RESEARCH
ABSTRACT.....: OBJECTIVES: THE PURPOSE OF THE PROPOSED WORK IS TO OBJECTIVELY EVALUATE THE GENERAL APPLICABILITY OF THREE TREATMENT PROCESSES FOR REMOVAL OF NITRATE FROM PUBLIC WATER SUPPLIES. THE PROCESSES ARE ION EXCHANGE, REVERSE OSMOSIS AND A COMBINATION PROCESS. THE EVALUATION WILL CONSIST OF USING LABORATORY SIZE AND FIELD-TEST EQUIPMENT TO ESTABLISH DESIGN CRITERIA AND OPERATING EXPERIENCE USEFUL FOR DESIGNING A FULL-SCALE PLANT OF APPROXIMATELY 1 MGD CAPACITY. APPROACH: R.O. AND ION EXCHANGE EQUIPMENT WILL BE DESIGNED AND ASSEMBLED FOR THE PURPOSE OF CONDUCTING A NUMBER OF EXPERIMENTS AND ENGINEERING TESTS TO DETERMINE THE TECHNICAL AND ECONOMIC FEASIBILITY OF WELL SITE TREATMENT OF WATER FOR NITRATE AND ARSENIC REMOVAL. EXPERIMENTS WILL BE CONDUCTED ON NATURAL AND SIMULATED WATERS. CURRENT PLANS: THE EXPERIMENTAL PROGRAM WILL INVESTIGATE THE THREE PROCESSES AND OBTAIN DATA ON THE FOLLOWING PARAMETERS REQUIRED FOR DESIGN OF LARGER SCALE PLANTS AND REALISTIC COST ESTIMATES FOR THE PROCESSES. WATER QUALITY, RATE OF LONG-TERM WATER PRODUCTION, QUANTITY AND KINDS OF CHEMICALS REQUIRED, WATER RECOVERY, QUANTITY AND COMPOSITION OF WASTE PRODUCTS, LABOR REQUIREMENTS AND INTERFERENCE BY COMMON IONS. EQUIPMENT OF TWO DIFFERENT SIZES WILL BE CONSTRUCTED AND OPERATED. LABORATORY SIZE R.O. AND ION EXCHANGE WILL BE USED INITIALLY TO SELECT MEMBRANES, MODULE CONFIGURATION, AND RESINS SUITABLY ADAPTED FOR THE MCFARLAND WELL WATER. R.O. AND ION EXCHANGE FIELD TEST EQUIPMENT WILL THEN BE DESIGNED AND OPERATED.

**PROJECT: 00425-OIL SLICK DISPERSAL MECHANICS

STARTING/ COMPLETION DATE : 07/78 - 06/80 : FUNDING : ESTIMATED - FY78 / $ 25000
TASK CODE=R623C-680 **EPA=R805901-01 ** (GRANT) PRIOR FY /

EPA OFFICER,: LT MCCARTHY EPA/IERL - CINC
INVESTIGATOR,: RC AHLERT RUTGERS STATE UNIV OF NJ SCH OF EN/CHEM & BIOCHEM ENG
JV HUNTER RUTGERS STATE UNIV OF NJ SCH OF EN/CHEM & BIOCHEM ENG
CE POLYMEROPOUL RUTGERS STATE UNIV OF NJ SCH OF EN/CHEM & BIOCHEM ENG
FA USAMOK RUTGERS STATE UNIV OF NJ SCH OF EN/CHEM & BIOCHEM ENG
MILESTONES...: 06/80 -FINAL REPORT RECEIVED
PLAN ID.....: (AP-623C)(DU-N105) ENERGY RESOURCE EXTRACTION AND HANDLING, OIL & GAS PROD.
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
20-10 AA FOR WATER AND HAZARDOUS MATERIALS
ORDIS CODES,.: RECN-000425 SSIE-ZZ 223 EPA -R805901-01 TASK-R623C-680
ORD -RR10C30-5078 MAND-10-01 MAND-20-10
ORD -RR10830-5078 AP -623C DU -N105 LABT-EMI

PROJ STATUS,.: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: SPECIFIC AIMS OF THE PROPOSED RESEARCH PROJECT ARE AS FOLLOWS: EVALUATE CHEMICAL OIL SLICK DISPERSANTS UNDER CONTROLLED CONDITIONS IN A LABORATORY AQUARIUM, SIMULATING CHEMICAL VARIABLES AS FAR AS POSSIBLE; STUDY THE IMMEDIATE SURFACE OR SLICK ENVIRONMENT WITH RESPECT OF SURFACE DISRUPTION, DROPLET FORMATION AND DROPLET MOTIONS, WITH OPTICAL TECHNIQUES; EMPHASIZE CONTROL OF SAMPLING PROCEDURES AND DEVICES; SAMPLE FOR CHEMICAL ANALYSES AND CARRY OUT PHYSICAL AND OPTICAL MEASUREMENTS TO QUANTIFY THE RATE AND MECHANISMS OF SLICK BREAKUP; AND ATTEMPT TO IDENTIFY CHEMICAL (THERMODYNAMIC) STRUCTURES AND SHORT-TERM FATES

**PROJECT: 03217-ANALYSIS OF MATHEMATICAL MODELS FOR POLLUTANT TRANSPORT AND DISSIPATION

STARTING/ COMPLETION DATE : 08/78 - 08/80 : FUNDING : ESTIMATED - FY78 / $ 38600
TASK CODE=K760B-450 **EPA=R805902-01 ** (GRANT) PRIOR FY /

EPA OFFICER,: JW FALCO EPA/ERL - ATHENS
INVESTIGATOR,: WF AMES UNIV OF GEORGIA CTR FOR APPLIED MATH
G ADOMIAN UNIV OF GEORGIA CTR FOR APPLIED MATH
DC BARROW UNIV OF GEORGIA CTR FOR APPLIED MATH
MILESTONES...: 10/79 -PUBLISH INTERIM REPORT ON DELIRMUNISTIC MODELS
10/80 -FINAL REPORT: ANAL. OF MATH. MODELS FOR POLL. TRANSPORT AND DISI
PLAN ID.....: (AP-760B)(DU-L135) EXPOSURE FOR SOIL & WATER ROUTES
MANDATE.....: 10-03 TOXIC SUBSTANCES CONTROL ACT
ORDIS CODES,.: RECN-005217 SSIE-ZZ 325 EPA -R805902-01 TASK-K760B-450
ORD -RK10C51-1078 MAND-10-03 AP -760B
DU -L135 LABT-ALR

PROJ STATUS,.: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
COMMENT.....: K760B - $37300, K609A - 1300 0031
ABSTRACT.....: THE OBJECTIVES OF THIS PROJECT ARE TO PERFORM DIMENSIONAL SIMILITUDE ANALYSES AND OBTAIN EXACT SOLUTIONS FOR MORE REALISTIC NONLINEAR AND STOCHASTIC MODELS OF POLLUTANT TRANSPORT, BIOLOGICAL AND CHEMICAL DEGRADATION, AND DISPERION IN RIVERS AND STREAMS. THE RESULTS OF THE ANALYSES WILL BE USED TO STUDY THE IMPACT, CONTROL AND PERSISIENCE OF CONTAMINANTS IN RIVERS AND STREAMS. THE APPROACH TO SOLVING THESE PROBLEMS WILL BE PERFORMED USING THE METHODS OF NONLINEAR ANALYSES AS GIVEN IN THE INVESTIGATOR'S BOOKS ON NONLINEAR PROBLEMS. SPECIFIC METHODS WILL INCLUDE SIMILARITY ANALYSES, SINGULAR PERTURBATION METHODS, NONLINEAR SUPERPOSITION, ADOMIAN'S SERIES, WAVES OF PERMANENT PROFILE, ETC. INITIAL STUDIES OF THE FIRST TWO PROBLEMS, IN WHICH DISPERSION IS NEGLECTED, SHOW THEM TO BE AMENABLE TO SOLUTION.

**PROJECT: 00865-INVESTIGATION OF FACTORS INVOLVED IN ADAPTION OF WOODY SPECIES TO ENVIRONMENTAL CONDITIONS ON COMPLETED REFUSE LANDFILLS
STARTING/ COMPLETION DATE : 05/78 - 09/80 : FUNDING : ESTIMATED - FY78 / $ 30000
TASK CODE=C618A-097 **EPA=R805907-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: RE LANDRETH EPA/MERL - CINC
INVESTIGATOR.: FB FLOWER RUTGERS STATE UNIV OF NJ DEPT OF PLANT PATHOLOGY
IA LEONE RUTGERS STATE UNIV OF NJ DEPT OF PLANT PATHOLOGY
MILESTONES...: 09/79 -INTERIM REPORT
09/80 -FINAL REPORT
PLAN ID.....: (AP-618A)(DU-D110) SOLID & HAZARDOUS WASTE MANAGEMENT
MANDATE.....: 10-05 RESOURCE CONSERVATION AND RECOVERY ACT
ORDIS CODES..: RECN-000865 SSIE-GMA 5102 EPA -R805907-01 TASK-C618A-097
ORD -RC10830-1078 MAND-10-05 AP -618A
DU -D110 LABT-ALA

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVES OF THIS STUDY ARE: (A) TO MONITOR THE FIELD EXPERIMENTS ALREADY IN PROGRESS IN NEW JERSEY INVOLVING SCREENING OF WOODY SPECIES FOR ADAPTABILITY TO LANDFILL CONDITIONS AND ASSESSMENT OF PLANTING TECHNIQUES FOR EXCLUSION OF LANDFILL GASES FROM ROOT ZONES, FOR THE LONG-TERM PATTERN. (B) TO REPLACE TREES FOUND UNSUITABLE FOR LANDFILL CONDITIONS WITH OTHER POTENTIALLY ADAPTABLE SPECIES TO OBTAIN ADDITIONAL TOLERANCE INFORMATION. (C) TO EVALUATE THE INFLUENCE OF SECONDARY FACTORS SUCH AS SIZE OF TREES AT PLANTING, THE USE OF BARE-ROOTED VS. CONTAINERIZED TREES, AND THE EFFECT OF WATER STRESS ON THE ADAPTABILITY OF SPECIES TO LANDFILL CONDITIONS. (D) TO ASSESS THE VALUE OF MYCORRHIZAL FUNGI IN INDUCING TOLERANCE OF TREES TO LANDFILL CONDITIONS. STUDIES ALREADY IN PROGRESS TO SCREEN WOODY SPECIES FOR ADAPTABILITY TO LANDFILL CONDITIONS HAVE IDENTIFIED THE RELATIVE TOLERANCE OF 19 TREE SPECIES COMMONLY GROWN IN THE NORTHEAST, AND INVESTIGATIONS TO EVALUATE SUITABLE TECHNIQUES FOR EXCLUDING LANDFILL GASES FROM ROOT ZONES HAVE INDICATED THAT ABOVE-GROUND MOUNDS ARE SUPERIOR TO BACK-FILLED TRENCHES AS PLANTING SITES. THE PROPOSED PROJECT WILL INCLUDE FIELD AND GREENHOUSE INVESTIGATIONS. THE FIELD EXPERIMENTS ALREADY IN PROGRESS, WILL BE ENLARGED TO INCLUDE MEASUREMENT OF THE SECONDARY FACTORS (SIZE OF TREES, TYPE OF PRECONDITIONING, WATER STRESS, ETC.) WHICH INFLUENCE THE ADAPTABILITY OF TREES TO LANDFILL CONDITIONS. GREENHOUSE STUDIES WILL INVOLVE EXPERIMENTS TO EVALUATE VARIOUS METHODS OF "TAILORING" TREE SEEDS OR SEEDLINGS WITH MYCORRHIZAL FUNGI FOR VIABILITY UNDER LANDFILL GROWTH CONDITIONS.

-*PROJECT: 01768-LABORATORY INVESTIGATIONS OF DIFFUSION AND FUMIGATION INTO THE MIXED LAYER

STARTING/ COMPLETION DATE : 07/78 - 01/80 : FUNDING : ESTIMATED - FY78 / $ 50000
TASK CODE=G603A-AB-35 **EPA=R805912-01 ** (GRANT) PRIOR FY /

EPA OFFICER,: R LAMB EPA/ESRL - RTP
INVESTIGATOR,: JW DEARDORFF OREGON STATE UNIV SCH OF SCI/ATMOS SCI DEPT
GE WILLIS OREGON STATE UNIV SCH OF SCI/ATMOS SCI DEPT
MILESTONES...: 01/80 -FINAL REPORT ON DIFFUSION AND FUMIGATION PROCESSES
PLAN ID.....: (AP-603A)(DU-A125) ATMOSPHERIC PROCESSES AND EFFECTS
MANDATE.....: 10-02 CLEAN AIR ACT
ORDIS CODES..: RECN-001768 SSIE-GMA 5214 EPA -R805912-01 TASK-G603A-AB-35
ORD -RG10B30-1078 MAND-10-02 AP -603A
DU -A125 LABT-ALN

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: LABORATORY INVESTIGATIONS OF DIFFUSION IN THE CONVECTIVE MIXED LAYER FROM AN ELEVATED SOURCE WITHIN THE MIXED LAYER WILL BE MADE (1ST YEAR), AS WELL AS FUMIGATION INTO THE MIXED LAYER BY CONTAMINANTS INITIALLY SITUATED ABOVE THE MIXED YEAR (2ND AND 3RD YEARS). THESE STUDIES WILL MAKE USE OF A LARGE CONVECTION TANK AS EARLIER STUDIES ESTABLISHED ITS USEFULNESS IN MODELING TURBULENCE AND DIFFUSION. IN THE DIFFUSION EXPERIMENTS THE ELEVATED SOURCE WILL BE LOCATED AT ONE-HALF THE MIXED LAYER HEIGHT. DIMENSIONLESS CONCENTRATIONS WILL BE MAPPED ONTO A UNIVERSAL DOWNWIND-CROSSWIND PLOT WITH ATTENTION FOCUSSED UPON POSSIBLE EXISTENCE OF A SINKING IN THE HEIGHT OF MAXIMUM CONCENTRATION IN THE DOWNSTREAM DIRECTION. IN THE FUMIGATION EXPERIMENTS A NEW APPROACH WILL BE TAKEN, NAMELY TO RELATE PEAK CONCENTRATIONS AT GROUND LEVEL TO THE MAXIMUM CONCENTRATION ALOFT AT THE START OF THE FUMIGATION EPISODE. IN THIS WAY THE EFFECTS OF MIXED-LAYER DIFFUSION IN DILUTING FUMIGANTS AS THEY PROCEED TOWARDS THE GROUND WILL BE MADE MANIFEST. THE FREQUENCY OF OCCURRENCE OF FUMIGATING MATERIAL AT GROUND LEVEL WILL ALSO BE EXPLORED, ALONG WITH THE SPATIAL DISTRIBUTION OF FUMIGATING STREAMERS. IN OTHER EXPERIMENTS THE LATERAL SPREAD OF FUMIGANTS DOWN FROM THE INITIAL PRE-FUMIGATION PLUME WILL BE STUDIED, AND THE INFLUENCE OF ENTRAINMENT RATE UPON PEAK RELATIVE GROUND-LEVEL CONCENTRATIONS.

**PROJECT: 01890-STRATOSPHERIC OZONE IN URBAN AIR

STARTING/ COMPLETION DATE : 04/78 - 02/79 : FUNDING : ESTIMATED - FY78 / $ 38700
TASK CODE=G603A-AH-18 **EPA=R805913-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: TT BUFALINI EPA/ESRL - RTP
INVESTIGATOR.: L HUSAIN HLTH RES INC
MILESTONES...: 02/79 -REPORT ON WORK IN HOUSTON IN SUMMER OF 78
PLAN ID.....: (AP-603A)(DU-A125) ATMOSPHERIC PROCESSES AND EFFECTS
MANDATE.....: 10-02 CLEAN AIR ACT
ORDIS CODES..: RECN-001890 SSIE-GMA 5215 EPA -R805913-01 TASK-G603A-AH-18
ORD -RG10B30-1078 LABN-G603A-AH-14 MAND-10-02
AP -603A DU -A125 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE PRINCIPAL SOURCES OF TROPOSPHERIC OZONE ARE, (1) TRANSPORT FROM STRATOSPHERE VIA TROPOPAUSE FOLDING, AND (2) PHOTOCHEMICAL REACTIONS INVOLVING HYDROCARBONS AND THE OXIDES OF NITROGEN. MEASUREMENTS USING 7BE AS A STRATOSPHERIC TRACER, HAVE SHOWN THAT AT WHITEFACE MOUNTAIN, NEW YORK, A SIGNIFICANT FRACTION OF THE OBSERVED OZONE ORIGINATES IN THE STRATOSPHERE. PRELIMINARY 7BE CONCENTRATION MEASUREMENTS AT HOUSTON, TEXAS SUGGEST STRATOSPHERIC INTRUSION INTO GROUND LEVEL MUCH LIKE THAT WHICH OCCURS AT WHITEFACE MOUNTAIN, WE PROPOSE TO CARRY OUT AT HOUSTON A DETAILED INVESTIGATION OF THE CONTRIBUTION OF STRATOSPHERIC OZONE TO URBAN AIR USING 7BE AND 32P AS TRACERS OF STRATOSPHERIC OZONE. OUR ONGOING MEASUREMENTS OF THE STRATOSPHERIC 7BE/OZONE MIXING RATIOS AS PART OF NASA'S GLOBAL ATMOSPHERIC SAMPLING PROGRAM (GASP) SHOULD ENABLE, FOR THE FIRST TIME, A DIRECT DETERMINATION OF THE STRATOSPHERIC OZONE COMPONENT IN GROUND-LEVEL AIR USING THE DATA OBTAINED FROM THE PROPOSED MEASUREMENTS OF 7BE AND 32P. SUCH MEASUREMENTS OF THE CONTRIBUTION OF THE STRATOSPHERIC OZONE TO GROUND-LEVEL AIR ARE ESSENTIAL TO DEVELOPING AN ENFORCEABLE AIR QUALITY STANDARD FOR OZONE AND FOR DESIGNING AN OXIDANT CONTROL STRATEGY.

**PROJECT: 00872-AN ECONOMIC ASSESSMENT OF GOVERNMENTAL RISK MANAGEMENT POLICIES

STARTING/ COMPLETION DATE : 07/78 - 06/79 : FUNDING : ESTIMATED - FY78 / $ 99964
TASK CODE=C618A-107 **EPA=R805920-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: OR ALBRECHT EPA/MERL - CINC
INVESTIGATOR.: RC ANDERSON ENV LAW INST
MILESTONES...: 02/79 -DEVEL. OF ANALYTICAL FRAMEWORK AND ANALYSIS OF APPROACHES
06/79 -INTERIM REPORT
PLAN ID.....: (AP-618A)(DU-D110) SOLID & HAZARDOUS WASTE MANAGEMENT
MANDATE.....: 10-05 RESOURCE CONSERVATION AND RECOVERY ACT
ORDIS CODES..: RECN-000872 SSIE-GMA 5106 EPA -R805920-01 TASK-C618A-107
ORD -RC10B30-1078 MAND-10-05 AP -618A
DU -D110 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: PRIMARY OBJECTIVES ARE: 1) TO EXAMINE THE APPLICABILITY OF COST BENEFIT ANALYSIS AND OTHER RELATED DECISION CRITERIA TO THE MANAGEMENT OF HAZARDOUS WASTE, AND 2) TO ANALYZE WITHIN A GENERALIZED COST-BENEFIT FRAMEWORK A NUMBER OF PAST DECISIONS IN GOVERNMENT PROGRAMS FOR THE MANAGEMENT OF HEALTH, ENVIRONMENTAL, AND SAFETY RISKS. THE APPROACH INCLUDES: 1) REVIEW OF THE THEORETICAL AND EMPIRICAL LITERATURE PERTAINING TO VALUING RISKS, 2) FORMALIZATION OF THE GENERALIZED COST-BENEFIT METHODOLOGY, 3) SAMPLE SELECTION OF GOVERNMENT PROGRAMS, 4) ANALYSIS OF THE SAMPLE, AND 5) SYNTHESIS OF THE RESULTS.

**PROJECT: 03762-CRITICAL REVIEW AND EVALUATION OF RESEARCH ON THE IMPACT OF ENERGY-RELATED WASTES ON THE AQUATIC ENVIRONMENT
STARTING/ COMPLETION DATE : 07/78 - 07/81 : FUNDING : ESTIMATED - FY78 / $ 49900
TASK CODE=N625A-083 **EPA=R805921-01 ** (GRANT) PRIOR FY /

EPA OFFICER..:	KE BIESINGER	EPA/ERL - DULUTH	
INVESTIGATOR..:	WR CHAPPELL	UNIV OF COLORADO	ARTS & SCI/ASTRO GEO DEPT
	R DAMRAUER	UNIV OF COLORADO	ARTS & SCI/ASTRO GEO DEPT
	DO CHIKAS	UNIV OF COLORADO	ARTS & SCI/ASTRO GEO DEPT
MILESTONES...:	07/79 -STATE-OF-THE-ART REPORT		
	07/80 -STATE-OF-THE-ART REPORT		
	07/81 -STATE-OF-THE-ART REPORT		
PLAN ID.....:	(AP-625A)(DU-N140) EFFECTS OF ENERGY-RELATED POLL. ON ORGANISMS & ECOSYSTEMS		
FINAL OUTPUT..:	ANNUAL STATE OF THE ART DOCUMENTS		0047
MANDATE.....:	30-99 OGY-CHEMISTRY	0047	
ORDIS CODES..:	RECN-003762	SSIE-GMA 4940	EPA -R805921-01 TASK-N625A-083
	ORD -RN10830-3078	MAND-30-99	AP -625A
	DU -N140	LABT-HEE	

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE PURPOSE OF THE PROPOSED WORK IS TO CRITICALLY REVIEW COMPLETED AND ON-GOING RESEARCH RELATED TO THE IMPACT OF ENERGY-RELATED WASTES ON THE AQUATIC ENVIRONMENT. THE SPECIFIC OUTPUTS OF THE WORK WILL BE ANNUAL "STATE-OF-THE-ART" DOCUMENTS THAT WILL DESCRIBE THE PRESENT STATE OF THE RESEARCH AND CRITICAL AREAS WHERE RESEARCH IS NEEDED IN ORDER TO PROVIDE A DATA BASE FOR DECISION MAKERS.

**PROJECT: 00535-STORMWATER POLLUTION ANALYSIS WITH MAC MODEL IN CONTINUING PLANNING UNDER 208 PLANNING
STARTING/ COMPLETION DATE : 04/78 - 12/79 : FUNDING : ESTIMATED - FY78 / $ 45000
TASK CODE=C611A-0012 **EPA=R805927 ** (GRANT) PRIOR FY /

EPA OFFICER..:	CY FAN	EPA/MERL - CINC	
INVESTIGATOR..:	YJ LITWIN	ASSN OF BAY AREA GOVTS	
	JA LAGER	METCALF & EDDY ENG INC	
MILESTONES...:	01/79 -MODEL APPLICATION SUMMARY		
	03/79 -INTERIM REPORT		
	09/79 -MODEL VERIFICATION		
PLAN ID.....:	(AP-611A)(DU-B106) URBAN RUNOFF POLLUTION CONTROL		
FINAL OUTPUT..:	DOCUMENTATION AND USERS GUIDE		0012
MANDATE.....:	10-01 FEDERAL WATER POLLUTION CONTROL ACT		
	30-99 ROUMENTAL	0012	
ORDIS CODES..:	RECN-000535	SSIE-ZZ 408	EPA -R805927 TASK-C611A-0012
	ORD -RC10C30-5078	MAND-10-01	MAND-30-99
	AP -611A	DU -B106	LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE STUDY PERTAINS TO THE REFINEMENT AND DOCUMENTATION OF THE MACROSCOPIC PLANNING (MAC) MODEL BASED ON THE ASSOCIATION OF BAY AREA GOVERNMENTS' (ABAG'S) APPLICATION EXPERIENCE FOR THEIR PL 92-500, SECTION 208 AREAWIDE WASTEWATER MANAGEMENT STUDY. THE MAC MODEL OFFERS BROAD BENEFITS TO THE CONTINUING PLANNING PROCESS THROUGH WIDE AERIAL COVERAGE, SENSITIVITY TO LAND USE MANAGEMENT, ANALYSIS OF MITIGATION MEASURES, AND SIMPLICITY OF APPLICATION BY LOCAL AGENCIES. NATIONAL REFINEMENT AND DISSEMINATION OF THE METHODOLOGY WILL TAKE PLACE BY WAY OF: 1. SUMMARY OF ABAG EXPERIENCE WITH MAC MODEL APPLICATION, 2. MODEL REFINEMENT AND SENSITIVITY ANALYSIS, 3. SELECTIVE MONITORING/CALIBRATION, 4. DOCUMENTATION AND USERS GUIDE.

**PROJECT: 03212-1978 GORDON RESEARCH CONFERENCE IN ENVIRONMENTAL SCIENCES - WATER

STARTING/ COMPLETION DATE : 04/78 - 07/78 : FUNDING : ESTIMATED - FY78 / $ 9130
TASK CODE=K7608-216 **EPA=R805928-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: GL BAUGHMAN EPA/ERL - ATHENS
INVESTIGATOR.: AM CRUICKSHANK UNIV OF RHODE ISLAND GORDON RES CONF
JB ANDELMAN UNIV OF RHODE ISLAND GORDON RES CONF
MILESTONES...: 06/78 -CONFERENCE HELD IN NEW HAMPSHIRE
PLAN ID.....: (AP-760B)(DU-L135) EXPOSURE FOR SOIL & WATER ROUTES
MANDATE.....: 30-99 ONMENTAL SCIENCE 0030
ORDIS CODES..: RECN-003212 SSIE-GMA 5039 EPA -R805928-01 TASK-K7608-216
ORD -RK10H30-3078 MAND-30-99 AP -760H
DU -L135 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: IN JUNE 1978, THERE WILL BE A GORDON RESEARCH CONFERENCE ON ENVIRONMENTAL SCIENCES; WATER. TITLE: REACTION AND FATES OF ORGANICS IN NATURAL WATERS PLACE: HOLDERNESS SCHOOL, PLYMOUTH, NEW HAMPSHIRE, USA TIME: JUNE 26-30, 1978 THE CONFERENCE WILL DEAL WITH THE REACTIONS AND FATES OF ORGANICS, PRINCIPALLY ANTHROPOGENIC, IN FRESH WATER AND MARINE SYSTEMS. THERE WILL BE ABOUT 12 PRESENTATIONS BY INVITED SPEAKERS IN THE FIVE DAY MEETINGS, WITH EXTENSIVE TIME FOR DISCUSSION. THE TOPICS OF INTEREST ARE: CHEMICAL AND PHOTOCHEMICAL REACTIONS; INTERACTIONS WITH SEDIMENTS, PARTICULATES AND THE ATMOSPHERE; INTERACTIONS WITH AND INFLUENCES OF BIOLOGICAL SYSTEMS; INFLUENCE OF TRANSPORT ON DISTRIBUTION. SPECIFIC ORGANIC CHEMICALS RATHER THAN ORGANIC PARAMETERS WILL BE EMPHASIZED. BOTH FIELD AND LABORATORY STUDIES WILL BE DISCUSSED. THE PURPOSE OF THIS GRANT IS TO PROVIDE FINANCIAL ASSISTANCE TO SUPPORT THE TRAVEL AND CONFERENCE COSTS OF FOREIGN AND U.S. PARTICIPANTS WHO WOULD OTHERWISE FIND IT DIFFICULT TO ATTEND.

**PROJECT: 00537-ANALYSIS OF APPLIED BEST MANAGEMENT PRACTICES FOR STORMWATER QUALITY CONTROL

STARTING/ COMPLETION DATE : 11/78 - 11/81 : FUNDING : ESTIMATED - FY78 / $ 120000
TASK CODE=C611A-0072 **EPA=R805929-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: H MASTER EPA/MERL - CINC
INVESTIGATOR.: HJ CYRE BELLEVUE CITY GOVERNMENT
P MISSONNETTE BELLEVUE CITY GOVERNMENT
MILESTONES...: 08/79 -INITIAL PHASE COMPLETED WITH REPORT
PLAN ID.....: (AP-611A)(DU-8106) URBAN RUNOFF POLLUTION CONTROL
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
30-99 NONMENTAL ENGINEERING 0000
ORDIS CODES..: RECN-000537 SSIE-ZZ 753 EPA -R805929-01 TASK-C611A-0072
ORD -RC10C30-5078 MAND-10-01 MAND-30-99
AP -611A DU -8106 LABT-ALM

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVES: TO ANALYZE, AT THE FIELD DEMONSTRATION LEVEL, THE COST AND EFFECTIVENESS OF BEST MANAGEMENT PRACTICES (BMPS), INDIVIDUALLY AND IN COMBINATION, DURING A PORTION OF THE FIRST YEAR SOME INITIAL MONITORING OF TWO BASINS WITH NO BMPS WILL BE CONDUCTED TO SEE IF ONE IS A REASONABLE REPLICATE OF THE OTHER. SUCH STUDIES WILL INCLUDE A COMPLETE STREET AND DRAINAGE SYSTEM INVENTORY NON-STORM SURFACE AND DRAINAGE SYSTEM SAMPLING, AS WELL AS A FEW STORMS. FOLLOWING THE SUCCESSFUL CONCLUSION OF THESE TASKS, BMP APPLICATION (STREET CLEANING, CULVERT CLEANING, CATCH BASIN CLEANING, ETC.) WOULD BEGIN IN ONE OF THE BASINS, MAINTAINING THE OTHER AS A CONTROL. IN THIS MANNER BMP EFFECTIVENESS COULD BE DETERMINED BY DIRECT COMPARISON DURING THE FIRST YEAR. USING SUCH TOOLS AS A DESKTOP ANNUAL LOAD MODEL, DIFFERENCES IN ANNUAL LOAD COULD BE CALCULATED USING REGIONAL PRECIPITATION DATA. EACH BASIN WOULD BE MODELED AND THE STUDY OF PARAMETER SENSITIVITY COULD BE IMPROVED USING REAL DATA. DURING THE SECOND YEAR THE BASINS COULD BE SWITCHED; DIRECT COMPARISON BETWEEN BASINS ON BOTH AN EVENT AND AN ANNUAL BAD BASIS WOULD YIELD INFORMATION ON BMP EFFECTIVENESS. FINAL OUTPUTS: TO REPORT ON AND DISSEMINATE THE RESULTS OF THE ABOVE OBJECTIVES. RESULTS TO DATE: NOT APPLICABLE AT THIS TIME.

**PROJECT: 04509-BIOLOGICAL CONTROL OF NUSK AND PLUMELESS THISTLE IN PASTURES

STARTING/ COMPLETION DATE : 08/78 - 08/81 : FUNDING : ESTIMATED - FY78 / $ 29013
TASK CODE=X771E-002 **EPA=R805931-01 ** (GRANT) PRIOR FY /

EPA OFFICER..: KJ HUDD EPA/HDQTRS- OHLE
INVESTIGATOR..: LT KUK VA POLY INST/STATE UNIV SCH OF AGRIC & LIFE SCI
RL PIENKOWSKI VA POLY INST/STATE UNIV SCH OF AGRIC & LIFE SCI
PLAN ID.....: (AP-771E)(DU-E120) INTEGRATED PEST MANAGEMENT
MANDATE.....: 10-06 FEDERAL INSECTICIDE, FUNGICIDE AND RODENTICIDE AC
ORDIS CODES..: RELN-004309 SSIE-ZZ 321 EPA -R805931-01 TASK-X771E-002
ORD -RX10D30-107R MAND-10-06 AP -771E
DU -E120 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE MAIN OBJECTIVE OF THIS PROJECT IS TO EVALUATE THE IMPACT OF THREE BIOLOGICAL CONTROL AGENTS USED SIMULTANEOUSLY FOR THE CONTROL OF NUSK THISTLE (CARDUUS NUTANS L.) AND PLUMELESS THISTLE (CARDUUS ACANTHOIDES L.) IN PASTURES. BOTH THISTLES ARE INTRODUCED PLANTS WHICH HAVE SPREAD RAPIDLY IN THE ABSENCE OF THEIR NATURAL ENEMIES, AND ARE CURRENTLY VERY SERIOUS WEED PROBLEMS IN MANY PARTS OF NORTH AMERICA. CURRENT CONTROL PROCEDURES ARE BASED MAINLY ON THE USE OF HERBICIDES, WHICH ARE EXPENSIVE, SHORT-TERM MEASURES. THE EXPERIMENTAL USE OF BIOLOGICAL CONTROL AGENTS IN OUR STUDIES HAVE SHOWN THE POTENTIAL OF NATURAL ENEMIES FOR LONG-TERM SUPPRESSION OF THISTLES. WE HAVE THREE INSECTS WHICH CAN BE USED JOINTLY WITHOUT DIRECT INTERSPECIFIC COMPETITION SINCE EACH ATTACKS A DIFFERENT PART OF THE THISTLE PLANT. THESE ARE A THISTLE-HEAD FEEDING WEEVIL (RHINOCYLLUS CONICUS FROELICH), A ROSETTE WEEVIL (CEUTHORRHYNCHIDIUS HORRIDUS PANZER), AND A LEAF BEETLE (CASSIDA RUBIGINOSA MULLER). THIS BIOLOGICAL APPROACH OFFERS A VIABLE ALTERNATIVE TO CHEMICAL CONTROL OF THISTLES IN THE U.S.A. SUCCESSFUL IMPLEMENTATION OF THIS RESEARCH WILL HELP TO ALLEVIATE OUR HEAVY DEPENDENCE ON THE USE OF HERBICIDES. THIS WILL REDUCE ENVIRONMENTAL HAZARDS CAUSED BY THE CONTI

**PROJECT: 02162-FUEL ECONOMY AND EMISSIONS PERFORMANCE OF DIESEL AUTOMOBILES

STARTING/ COMPLETION DATE : 06/78 - 09/81 : FUNDING : ESTIMATED - FY78 / $ 76000
TASK CODE=G712B-BC-53 **EPA=RR05934-01 ** (GRANT) PRIOR FY /

EPA OFFICER..: P GAHELE EPA/ESRL - RTP
INVESTIGATOR..: RE GIBBS STATE DEPT OF ENV CONSRV
GP MUTZAR STATE DEPT OF ENV CONSRV
SM MYER STATE DEPT OF ENV CONSRV
MILESTONES...: 07/79 -ANNUAL REPORT
08/79 -FINAL REPORT
PLAN ID.....: (AP-712B)(DU-A130) CHAR, AND MEASUREMENT METHODS DEVELOPMENT (AIR)
MANDATE.....: 20-24 U&A FOR MOBILE SOURCE AIR POLLUTION CONTROL
ORDIS CODES..: RECN-002162 SSIE-GMA 5198 EPA -RR05934-01 TASK-G712B-BC-53
ORD -RG10B51-2078 MAND-20-24 AP -712B
DU -A130 LABT-ALN

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
COMMENT.....: SPLIT FUNDING G712B-BC-53 AND G6018-CA-02 0043
ABSTRACT.....: THE OBJECTIVE OF THIS PROJECT IS THE COLLECTION OF COMPREHENSIVE EMISSIONS AND FUEL CONSUMPTION DATA FROM A GROUP OF FIFTEEN DIESEL-POWERED LIGHT-DUTY VEHICLES IN CONSUMER DRIVING. VEHICLES WILL BE TESTED AT PERIODIC INTERVALS THROUGHOUT 18 MONTHS OF MILEAGE ACCUMULATION IN NORMAL USE. AT EACH TEST POINT MEASUREMENTS WILL INCLUDE: REGULATED EMISSIONS, FUEL CONSUMPTION, PARTICULATE MASS, DETAILED CHEMICAL ANALYSIS OF PARTICULATE AND MUTAGENIC ACTIVITY OF PARTICULATE EXTRACTS BY THE AMES METHOD. CHEMICAL ANALYSIS OF DIESEL PARTICULATE WILL UTILIZE HIGH-PRESSURE LIQUID-LIQUID CHROMATOGRAPHY TO PREPARE EXTRACT FRACTIONS, GAS CHROMATOGRAPHY AND GAS CHROMATOGRAPHY/MASS SPECTROMETRY OF THESE FRACTIONS WILL BE USED TO ESTABLISH CORRELATION OF COMPOUND AND COMPOUND GROUPS WITH MUTAGENIC ACTIVITY RESULTS FROM AMES TESTS OF THESE SAME FRACTIONS. ON-BOARD FUEL METERS, AND DATA STORAGE, WILL PROVIDE COMPARISON OF LABORATORY FUEL CONSUMPTION DATA TO IN-USE PERFORMANCE. ADDITIONAL TESTING FOR EMISSIONS AND FUEL CONSUMPTION WILL BE PERFORMED AFTER OVERNIGHT COLD SOAK AT PREVAILING AMBIENT CONDITIONS TO ESTABLISH THE EFFECT OF SEASONAL VARIATIONS ON FUEL CONSUMPTION. RE

**PROJECT: 003A4-EVALUATION OF SURFACE AND GROUND WATER PROBLEMS ASSOCIATED WITH STRIP MINE SITES - PHASE II
STARTING/ COMPLETION DATE : 07/78 - 06/81 : FUNDING : ESTIMATED - FY78 / $ 450000
TASK CODE=R6238-843 **EPA=R805935-01 ** (GRANT) PRIOR FY /

EPA OFFICER,: SJ HUBBARD EPA/IERL - CINC
INVESTIGATOR,: TT WILLIAMS MONTANA STATE UNIV INST OF APPL RES
DG STUART MONTANA STATE UNIV INST OF APPL RES
R KUOB NORTH DAKOTA STATE UNIV
P RECHARD UNIV OF WYOMING DEPT OF AGRIC ENG
MILESTONES...: 07/81 -FINAL REPORT ON STRIP MINE EVALUATION
PLAN ID.....: (AP-6238)(OU-N105) ENERGY RESOURCE EXTRACTION AND HANDLING, SOLID FOSSIL FUELS
MANDATE.....: 10-99 -NUCLEAR ENERGY) PL 93-577 0009
ORDIS CODES,.: RECN-000384 SSIE-ZZ 441 EPA -R805935-01 TASK-R6238-843
ORD -RB10C30-1078 MAND-10-99 AP -6238
OU -N105 LAST-EMI

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: A RESEARCH PROGRAM INVOLVING FIVE UNIVERSITIES IN THE THREE STATES OF MONTANA, NORTH DAKOTA, AND WYOMING HAS BEEN INITIATED UNDER THE SPONSORSHIP OF THE ENVIRONMENTAL PROTECTION AGENCY TO RESPOND TO CONCERNS PERTINENT TO SURFACE MINING IN THE NORTHERN GREAT PLAINS. PHASE I, ONGOING SINCE 1975. PHYSICAL AND CHEMICAL CHARACTERIZATION OF POTENTIAL STRIP MINE SITES AND ASSOCIATED WATERS. DEVELOPMENT OF PRELIMINARY MODELS TO DESCRIBE WATER FLOW PATTERNS AND CHEMICAL CHARACTERISTICS. PHASE II, PROPOSED HEREIN, DEVELOPMENT AND REFINEMENT OF A PREDICTIVE FRAMEWORK CAPABLE OF EXPLAINING SATISFACTORILY INITIAL CONDITIONS AND PROVIDING PREDICTION OF THE EFFECTS OF GIVEN MINE PLANS. MONITORING OF THE EFFECTS DURING THE INITIAL MINING PERIOD. PHASE III, ANTICIPATED CONCLUDING WORK, APPLICATION OF PREDICTIVE FRAMEWORK AND THE ACCOMPANYING MONITORING. LONG-TERM OBJECTIVES. (1) CHARACTERIZE PHYSICAL SETTINGS OF THREE STUDY SITES (ONE IN EACH STATE); (2) CHARACTERIZE QUANTITY AND QUALITY OF GROUND AND SURFACE WATER AND THEIR INTERRELATION AT AND NEAR THESE SITES; (3) UNDERSTAND HOW PHYSICAL SETTING DETERMINES THE OBSERVED QUANTITY AND QUALITY OF SURFACE AND GROUND WATER; (4) EVALUATE LIKELY CONSEQUENCES OF ALTERNATIVE MINING AND RECLAMATION PLANS IN TERMS OF SURFACE AND GROUND WATER QUANTITY BASED ON UNDERSTANDING OF (3); (5) TEST THE PREDICTIONS OF (4) UNDER ACTUAL MINING AND RECLAMATION PLANS; AND (6) REFINE PREDICTIVE FRAMEWORK BASED ON RESULTS OF (5). OBJECTIVES (1) AND (2) WILL BE COMPLETED TO A REASONABLE DEGREE OF DETAIL BY THE END OF PHASE I (JUNE 1978). THE CHARACTERISTICS GATHERED UNDER (1) AND (2) WILL BE RECONCILED (OBJECTIVE (3)) BUT THE HYPOTHESES DEVELOPED WILL BE TESTED AND MODIFIED IN PHASE II.

**PROJECT: 00376-LIMESTONE TREATMENT OF ACID SPOIL

STARTING/ COMPLETION DATE : 05/78 - 08/81 : FUNDING : ESTIMATED - FY78 / $ 55000
TASK CODE=R6238-705 **EPA=R805936-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: RC WILMOTH
INVESTIGATOR.: GW KALB — EPA/IERL - CINC; BEDRAY COAL COMPANY
MILESTONES...: 08/81 -FINAL REPORT RECEIVED
PLAN ID.....: (AP=6238)(DU=N105) ENERGY RESOURCE EXTRACTION AND HANDLING, SOLID FOSSIL FUELS
MANDATE.....: 30-99 L ENGINEERING
ORDIS CODES..: RECN=000376 SSIE-ZZ 224 0008
ORD =R810C30-3078 MAND=30-99 EPA =R805936-01 TASK=R6238-705
DU =N105 LABT=EMI AP =6238

PROJ STATUS..: PROJECT=ACTIVE DATA=ORIGINAL CATEGORY=RESEARCH
ABSTRACT.....: THE POTENTIAL USE OF A COARSE GRADE OF LIMESTONE (PLUS 8 MESH) FOR OBTAINING GROWTH AND DECREASING ACIDIC RUNOFF IS BEING ASSESSED AS AN ECONOMIC SOLUTION TO RECLAMATION OF SURFACE COAL MINED LANDS. THE COARSE GRADE OF LIMESTONE IS BEING APPLIED TO THE SURFACE OF THE SPOIL WHERE IT WILL COME INTO CONTACT WITH RAINFALL AND SURFACE RUNOFF. TO AVOID 'COATING' THE LIMESTONE PARTICLES WITH IRON FROM THE ACIDIC WATER GENERATED IN THE SPOIL, THE LIMESTONE IS BEING APPLIED ABOVE THE ACIDIC SEEPAGE AT THE TOE OF THE SPOIL BANKS. THE MAJOR OBJECTIVE OF THIS STUDY IS TO DETERMINE IF THE COARSE LIMESTONE WILL ENHANCE REVEGETATION AND, AT THE SAME TIME, INCREASE THE ALKALINITY OF THE SURFACE WATER BEFORE IT INFILTRATES THE SPOIL. THE ADVANTAGES OF THE COARSE LIMESTONES ARE (1) ECONOMICS (THE PLUS 8 MESH MATERIAL IS A B/PRODUCT FROM THE PREPARATION OF AGRICULTURAL LIME), (2) THE CAPABILITY OF ADDING LARGER TONNAGES PER ACRE WITHOUT OVERLIMING, (3) THE GREATER RESISTANCE OF THE COARSER MATERIAL TO EROSIONAL FORCES, AND (4) THE LONGER-TERM EFFECT OF THE COA

**PROJECT: 02091-EVALUATION OF GAS-FILTER CORRELATION TECHNIQUES FOR THE SINGLE-ENDED MEASUREMENT OF SO2

STARTING/ COMPLETION DATE : 06/78 - 06/79 : FUNDING : ESTIMATED - FY78 / $ 30000
TASK CODE=G7128-BA-79 **EPA=R805956-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: WF HERGET — EPA/ESRL - RTP
INVESTIGATOR.: LW CHANEY — UNIV OF MICHIGAN — AEROSPACE ENG DEPT
FL BARTMAN — UNIV OF MICHIGAN — AEROSPACE ENG DEPT
MILESTONES...: 05/79 -COMPLETION OF INSTRUMENTATION EVALUATION
08/79 -COMPLETION OF FINAL REPORT
PLAN ID.....: (AP=7128)(DU=A130) CHAR. AND MEASUREMENT METHODS DEVELOPMENT (AIR)
FINAL OUTPUT.: INSTRUMENTS WILL BE SUITABLE FOR ENFORCEMENT AND SURVEILLANCE ACTIVITIES. 0041
MANDATE.....: 10-02 CLEAN AIR ACT 0041
ORDIS CODES..: RECN=002091 SSIE-ZZ 168 EPA =R805956-01 TASK=G7128-BA-79
ORD =R810C30-1078 LABN=G7128-B-37 MAND=10-02
AP =7128 DU =A130 LABT=ALN

PROJ STATUS..: PROJECT=ACTIVE DATA=ORIGINAL CATEGORY=RESEARCH
ABSTRACT.....: OBJECTIVE - EVALUATE TWO EXISTING PROTOTYPE GAS-FILTER CORRELATION RADIOMETERS THAT HAVE BEEN DESIGNED FOR SINGLE-ENDED REMOTE MEASUREMENT OF SO2 AND CO CONCENTRATIONS. APPROACH - COMPARE REMOTE DATA WITH GROUND TRUTH DATA IN FIELD STUDIES. FINAL OUTPUT - TWO GAS-FILTER CORRELATION RADIOMETERS WILL HAVE BEEN EVALUATED IN TERMS OF SENSITIVITY, ACCURACY, AND SPECIFICITY FOR REMOTE, SINGLE-ENDED MEASUREMENT OF SO2 AND CO IN STACK EFFLUENTS. IF SATISFACTORY, THESE INSTRUMENTS WILL BE SUITABLE FOR ENFORCEMENT AND SURVEILLANCE ACTIVITIES. RESULTS TO DATE - (PROGRAM HAS JUST BEEN INITIATED).

**PROJECT: 03344-FACILITATION OF GENERAL UNDERSTANDING AND APPLICATION OF GROUND-WATER MODELS

STARTING/ COMPLETION DATE : 06/78 - 06/81 : FUNDING : ESTIMATED - FY78 / $ 122368
TASK CODE=L614C-14 **EPA=R805978-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: JW KEELEY EPA/ERL - ADA
INVESTIGATOR.: CL KILLPACK BUTLER UNIV HOLCOMB RES INST
MILESTONES...: 07/79 -FIRST INTERIM REPORT
07/80 -SECOND INTERIM REPORT
07/81 -THIRD INTERIM REPORT
PLAN ID.....: (AP-614C)(OU-C110) WATER SUPPLY - GROUNDWATER MANAGEMENT
MANDATE.....: 20-99 OMB RESEARCH INST, INDIANAPOLIS, IN 0036
ORDIS CODES..: RECN-003344 SSIE-GMA 5024 EPA -R805978-01 TASK-L614C-14
ORD -RL10830-2078 MAND-20-99 AP -614C
OU -C110 LABT-ALA

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVE: THE OBJECTIVE OF THE PROPOSED PROJECT IS TO DEVELOP INSTITUTIONAL AND TECHNICAL MECHANISMS WHICH FACILITATE THE UNDERSTANDING AND APPLICATION OF GROUND-WATER MODELS AND THEIR ACCESSIBILITY TO POTENTIAL USERS. APPROACH: THE PROJECT WILL CREATE A CENTRAL "CLEARINGHOUSE" PROVIDING CONVENIENT ACCESS AND IMPROVED GUIDANCE TO ALL CONCERNED WITH DEVELOPMENT AND PROTECTION OF OUR GROUND WATER RESOURCE. THE PROJECT LOGICALLY ADDRESSES PROBLEM AREAS IDENTIFIED IN A PREVIOUS REPORT, "UTILIZATION OF NUMERICAL GROUND WATER MODELS FOR WATER RESOURCE MANAGEMENT". IN THIS REPORT, THE FOUR PROBLEM AREAS WERE: (A) ACCESSIBILITY OF MODELS TO POTENTIAL USERS, (B) COMMUNICATIONS BETWEEN MANAGERS AND TECHNICAL PERSONNEL, (C) INADEQUACIES IN THE DATA, AND (D) INADEQUACIES IN MODELING. THESE PROBLEMS ARE REAL IN THAT A MYRIAD OF GROUND-WATER MODELS HAVE BEEN GENERATED WORLDWIDE. THESE MODELS EXIST AT A STAGGERING EXPENSE IN TERMS OF MAN-HOURS AND DOLLARS AND ARE PRESENTLY INACCESSIBLE TO MOST POTENTIAL USERS.

**PROJECT: 01993-ATMOSPHERIC MEASUREMENTS OF TOXIC ORGANIC CHEMICALS

STARTING/ COMPLETION DATE : 09/78 - 08/81 : FUNDING : ESTIMATED - FY78 / $ 100000
TASK CODE=G7128-AF-12 **EPA=R805990-01 ** (GRANT) PRIOR Y /

EPA OFFICER.: J SPENCE EPA/ESRL - RTP
INVESTIGATOR.: HB SINGH S R I INTERNATL
MILESTONES...: 09/79 -PROGRESS REPORT
09/80 -PROGRESS REPORT
09/81 -FINAL REPORT
PLAN ID.....: (AP=7128)(OU=A130) CHAR. AND MEASUREMENT METHODS DEVELOPMENT (AIR)
FINAL OUTPUT.: DATA BASE ON THE SOURCES, SINKS, EMISSIONS AND EFFE 0038
OF TOXIC ORGANIC CHEMICALS IN URBAN AREAS. 0038
MANDATE.....: 10-03 TOXIC SUBSTANCES CONTROL ACT
ORDIS CODES..: RECN=001993 SSIE-ZZ 151 EPA =R805990-01 TASK=G7128-AF-12
ORD =RG10C30-1078 MAND=10-03 AP =7128
OU =A130 LABT=ALM

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVES: THIS RESEARCH PROGRAM WILL PROVIDE A DATA BASE ON THE SOURCES, SINKS, EMISSIONS AND EFFECT OF TOXIC ORGANIC CHEMICALS IN URBAN AREAS. APPROACH: METHODOLOGIES WILL BE DEVELOPED FOR THE MEASUREMENT OF A LARGE NUMBER OF TOXIC ORGANIC CHEMICALS. FIELD EXPERIMENTS WILL BE CONDUCTED AT SEVERAL URBAN LOCATIONS AND NEAR SEVERAL SPECIFIC SOURCE LOCATIONS TO QUANTIFY THE ATMOSPHERIC BURDEN OF TOXIC CHEMICALS. CURRENT PLANS: GAS CHROMATOGRAPHIC/MASS SPECTROMETRIC AND COULOMETRIC TECHNIQUES ARE BEING DEVELOPED FOR ATMOSPHERIC ANALYSIS OF POLLUTANTS. URBAN LOCATIONS WITHIN THE LOS ANGELES AREA WILL BE THE FIRST FIELD SITE.

**PROJECT: 01124-EFFECT OF CHLORITES, NITRITES, CHLORAMINES, COPPER (AND COMBINATIONS) ON NEONATE AND PREGNANT MICE WITH LOW G-6-PD ACTIVITY
STARTING/ COMPLETION DATE : 07/78 - 08/80 : FUNDING : ESTIMATED - FY78 / $ 73279
TASK CODE=D6148-017 **EPA=R805993-01 ** (GRANT) PRIOR FY /

EPA OFFICER,: P HEFFERNAN EPA/HEHL - CINC
INVESTIGATOR,: GS MOORE UNIV OF MASSACHUSETTS PUB HLTH DIV
EJ CALABRESE UNIV OF MASSACHUSETTS PUB HLTH DIV
MILESTONES...: 02/79 -PRELIMINARY DATA, CHLORITE, CHLORAMINE, NITRITE
08/79 -COMP, CHLORITE, CHLORAMINE, NITRITE CELL MEMBRANE EFFECTS
02/80 -PRELIM, NITRITE, CU, CHLORAMINE, CHLORITE CELL MEMB, EFFECTS
08/80 -COMPLETE PROJECT
PLAN ID.....: (AP-6148)(DU-C110) WATER SUPPLY - HEALTH EFFECTS RESEARCH
MANDATE.....: 10-13 SOLID WASTE DISPOSAL ACT
ORDIS CODES..: RECN-001124 SSIE-GMA 5375 EPA -R805993-01 TASK-D6148-017
ORD -RD10H30-1078 MAND-10-13 AP -6148
DU -C110 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THERE IS EVIDENCE THAT G-6-PD DEFICIENCY PREDISPOSES PERSONS TO OXIDANT STRESS RESULTING IN EITHER INCREASED ERYTHROCYTE DESTRUCTION OR METHB FORMATION, OR BOTH. THERE IS ADDITIONAL EVIDENCE THAT PREGNANT MOTHERS, FETUSES IN UTERO, AND NEWBORNS MAY ALSO BE PREDISPOSED TO OXIDANT STRESS. FURTHER, NITRITES, CHLORAMINES, AND COPPER MAY EXAGGERATE DESTRUCTION AND/OR METHB FORMATION IN BLOOD CELLS EXPOSED IN VIVO TO CHLORINE DIOXIDE OR CHLORITE. THE AUTHORS HAVE A RODENT MODEL THAT IS G-6-PD DEFICIENT (STRAIN C57L-J FROM JACKSON LABORATORIES IN BAR HARBOR, MAINE) AND ARE ABLE TO OBTAIN TIMED PREGNANT FEMALES OF THIS STRAIN TO STUDY THE EFFECTS OF OXIDANTS ON G-6-PD DEFICIENT PREGNANT FEMALES AND THEIR OFFSPRING. THEREFORE, THE OBJECTIVE OF THIS RESEARCH IS TO TEST THE HYPOTHESIS THAT NEONATE MICE BORN TO DAMS WITH G-6-PD DEFICIENCY ARE AT INCREASED RISK TO METHEMOGLOBINEMIA AND RETARDED GROWTH RATE FROM EXPOSURE TO CHLORITES, CHLORAMINES, NITRITES, AND COPPER (ALONE AND IN COMBINATION) WHEN COMPARED WITH NEONATE MICE OF DAMS WITH ELEVATED G-6-PD ACTIVITY. THE HEALTH EFFECTS OF THESE COMPOUNDS TO NEWBORN MICE WILL BE EVALUATED INDIVIDUALLY AND IN COMBINATION TO TEST

**PROJECT: 00798-A DATA ANALYSIS AND MANAGEMENT SYSTEM FOR PUBLIC WATER SUPPLIES

STARTING/ COMPLETION DATE : 05/78 - 01/80 : FUNDING : ESTIMATED - FY78 / $ 54000
TASK CODE=C614A-088 **EPA=R805994-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: KM CLARK EPA/MERL - CINC
INVESTIGATOR.: RA DETNINGER UNIV OF MICHIGAN SCH OF PUB HLTH
MILESTONES...: 08/79 -INTERIM REPORT PUBLISHED
05/80 -FINAL REPORT PUBLISHED
PLAN ID.....: (AP=614A)(OU=C110) WATER SUPPLY - WATER TREATMENT & SYSTEMS
MANDATE.....: 10-13 SOLID WASTE DISPOSAL ACT
ORDIS CODES..: RECN=000798 SSIE=ZZ 388 EPA =R805994-01 TASK=C614A-088
ORG =RC10C30-1078 MAND=10-13 AP =614A
OU =C110 LAMT=ALW

PROJ STATUS..: PROJECT=ACTIVE DATA=ORIGINAL CATEGORY=RESEARCH
ABSTRACT.....: THE SPECIFIC PURPOSE OF THIS RESEARCH AND DEMONSTRATION PROJECT IS TO DEVELOP A DATA ANALYSIS AND MANAGEMENT SYSTEM FOR THE DATA IN EPA'S INTERSTATE CARRIER FILE OR ANY OTHER DATA BASE SUCH AS THE NORS AND NOMS DATA. DATA BASE OF SELECTED PUBLIC WATER SYSTEMS WITH MANY PARAMETERS OF WATER QUALITY WILL BE STRUCTURED IN SUCH A WAY THAT THE DATA CAN BE ANALYZED ONLINE AND IN AN INTERACTIVE FORM. THE EFFECTS OF NEW REGULATIONS, TRENDS IN WATER QUALITY, AND POTENTIAL PROBLEM AREAS CAN BE QUICKLY ANALYZED USING SUCH A SYSTEM. IF THE DATA BASE CAN BE AUGMENTED TO CONTAIN RAW WATER DATA AND DATA ON THE PERFORMANCE AND ECONOMICS OF THE INDIVIDUAL TREATMENT UNITS, DETAILED ECONOMIC ANALYSES WOULD BE POSSIBLE ON THE RELATIONSHIPS BETWEEN RAW WATER QUALITY, TREATMENT METHODS, COSTS AND EXPECTED FINISHED WATER QUALITY.

**PROJECT: 02672-PYRETHROID CHEMISTRY AND TOXICOLOGY

STARTING/ COMPLETION DATE : 07/78 - 06/81 : FUNDING : ESTIMATED - FY78 / $ 57000
TASK CODE=H615F-8642 **EPA=R805999-01 ** (GRANT) PRIOR FY /

EPA OFFICER,:	RL HARUN	EPA/HERL - RTP	
INVESTIGATOR,:	JE CASIDA	UNIV OF CALIFORNIA	SCH OF NAT RES
	RL HOLMSTEAD	UNIV OF CALIFORNIA	SCH OF NAT RES
	KA SHEPERD	UNIV OF CALIFORNIA	SCH OF NAT RES
	C TSENG	UNIV OF CALIFORNIA	SCH OF NAT RES

MILESTONES...: 06/79 -METABOLISM OF PERMETHRIN IN AVIAN SPECIES
06/79 -METABOLISM OF DECAMETHRIN RODENTS
06/79 -PHOTODECOMPOSITION OF FENVALERATE AND KADETHRIN
06/80 -METABOLISM OF FENVALERATE AND KADETHRIN
06/81 -EVALUATION OF DELAYED NEUROTOXICITY OF PYRETHROIDS

PLAN ID.....: (AP=615F)(OU=E105) MULTI-ROUTE EXPOSURES: HEALTH IMPLICATIONS OF PESTICIDES (SUBSTITUTE CHEMICALS)
MANDATE.....: 10-06 FEDERAL INSECTICIDE, FUNGICIDE AND RODENTICIDE AC
20-30 AA FOR TOXIC SUBSTANCES

ORDIS CODES..: RECN-002672 SSIE-ZZ 469 EPA -R805999-01 TASK-H615F-8642
ORD -RH10C30-5078 MAND-10-06 MAND-20-30
AP -615F OU -E105 LABT-HEF

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH

ABSTRACT.....: PYRETHROIDS ARE NOW ENTERING WIDESPREAD USE IN AGRICULTURAL PEST CONTROL BECAUSE THEY COMBINE HIGH INSECTICIDAL ACTIVITY WITH LOW MAMMALIAN TOXICITY AND THEY DO NOT APPEAR IN PRELIMINARY STUDIES TO HAVE THE UNFAVORABLE TOXICOLOGICAL FEATURES AND PERSISTENCE ASSOCIATED WITH EARLIER CHLORINATED HYDROCARBON INSECTICIDES. THESE POTENT NEW PYRETHROIDS NO LONGER HAVE THE BIODEGRADABLE AND PHOTOLABILE SITES PRESENT IN THE PYRETHRINS AND OTHER CHRYSANTHEMATES. IT IS THEREFORE ESSENTIAL TO EXAMINE THEIR METABOLIC AND PHOTOCHEMICAL FATE AND THEIR TOXICOLOGY AS WITH ANY NEW CLASS OF PESTICIDE CHEMICALS. PYRETHROID ESTERS RADIOLABELED IN THE ACID AND ALCOHOL MOIETIES ARE USED TO DEFINE THE DISTRIBUTION AND METABOLIC FATE OF INDIVIDUAL ISOMERS, WHICH VARY GREATER THAN 1000-FOLD IN TOXICITY, IN VARIOUS ORGANISMS INCLUDING RATS, MICE, COWS, CHICKENS, INSECTS AND PLANTS. THESE LABELED PYRETHROIDS AND UNLABELED PREPARATIONS ARE ALSO USED TO DEFINE THEIR PHOTOCHEMICAL REACTIONS WHICH INVOLVE ISOMERIZATION, OXIDATION, HYDROLYSIS AND A VARIETY OF OTHER PROCESSES. THE METABOLITES AND PHOTOPRODUCTS ARE SYNTHESIZED FOR PROOF OF STRUCTURE AND TO OBTAIN ADEQUATE AMOUNTS OF MATERIAL FOR BIOLOGICAL TESTING, INCLUDING TOXICITY TO MAMMALS AND INSECTS AND MUTAGENIC ACTIVITY IN MICROBIAL ASSAYS. TOXICOLOGICAL STUDIES ALSO CONSIDER POTENTIAL DELAYED NEUROTOXIC EFFECTS AND ANTIDOTES FOR ACUTE TOXICITY. PYRETHROIDS UNDER CURRENT INVESTIGATION ARE PERMETHRIN, CYPERMETHRI

**PROJECT: 00531-JOINT DRY-WET WEATHER FLOW TREATMENT OPTIMIZATION

STARTING/ COMPLETION DATE : 07/78 - 12/80 : FUNDING : ESTIMATED - FY78 / $ 48000
TASK CODE=C611A-0006 **EPA=R806003 ** (GRANT) PRIOR FY /

EPA OFFICER,: AN TAFURI EPA/MERL - CINC
INVESTIGATOR,: R WHEELER CLATSKANIE CITY GOVERNMENT
JH WHITELEY CLATSKANIE CITY GOVERNMENT
AH BENEDICT CLATSKANIE CITY GOVERNMENT
MILESTONES...: 02/80 -COMPLETE FIELD EVALUATION
06/80 -COMPLETE FINAL REPORT
09/80 -PUBLISH FINAL REPORT
PLAN ID.....: (AP=611A)(OU=R106) URBAN RUNOFF POLLUTION CONTROL
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
30-99 RUNMENTAL
0012
ORDIS CODES..: RECN-000531 SSIE-ZZ 410 EPA -R806003 TASK-C611A-0006
ORD -WC10C30-5078 MAND-10-01 MAND-30-99
AP -611A OU -R106 LABT-ALN

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE BASIC OBJECTIVE OF THIS PROJECT IS TO EVALUATE THE PERFORMANCE OF A DUAL DRY-WET WEATHER TREATMENT FACILITY CONSTRUCTED TO ALLEVIATE WET-WEATHER FLOW BYPASSING CAUSED BY EXCESSIVE INFILTRATION/INFLOW FROM THE CLATSKANIE SANITARY SEWERAGE SYSTEM. THE FACILITY HAS BEEN DESIGNED AND CONSTRUCTED TO HANDLE A FLOW RANGE OF 0.5 MGD AVERAGE DRY WEATHER FLOW TO 1.25 MGD WET WEATHER FLOW. BOTH WET AND DRY-WEATHER FLOW TREATMENT IS PROVIDED FOR IN THE SAME UNITS AND CONSISTS OF EITHER EXTENDED AERATION, CONVENTIONAL ACTIVATED SLUDGE, OR CONTACT STABILIZATION FOR DRY WEATHER PERIODS. AN AERATED GRIT TANK AND COMMINUTOR WILL PROVIDE PRELIMINARY TREATMENT FOLLOWED BY A PRIMARY CLARIFIER WHICH MAY ACT AS A SEDIMENTATION TANK DURING DRY WEATHER OR A DISSOLVED AIR FLOTATION TANK DURING WET WEATHER. THE EFFLUENT WILL THEN BE CONVEYED TO THE "VARIABLE-MODED" AERATION CONTACT TANK FOR BIOLOGICAL TREATMENT AND THENCE TO THE "VARIABLE-MODED" AERATION CONTACT TANK FOR BIOLOGICAL TREATMENT AND THENCE TO A SECONDARY CLARIFIER. CHLORINATION IS PROVIDED PRIOR TO DISCHARGE TO THE RECEIVING WATER. THE PERFORMANCE EVALUATION WILL INCLUDE THE OVERALL PLANT EFFICIENCY AS WELL AS THE EFFICIENCY OF THE INDIVIDUAL TREATMENT UNITS. BASED ON THESE EVALUATIONS, DESIGN CRITERIA WILL BE DEVELOPED TO ALLOW FOR LARGER SCALE PLANTS. CAPITAL AND OPERATING COST DATA WILL BE INCLUDED AND UTILIZED TO COMPARE THE COST EFFECTIVENESS OF THE DUAL TREATMENT VERSUS OTHER CONTROL OPTIONS SUCH AS INFILTRATION/INFLOW CORRECTION, STORAGE AND/OR SEPARATE TREATMENT.

**PROJECT: 01057-NUTRITIONAL ASSESSMENT OF CADMIUM EXPOSURE AND TOXICITY RISK IN AN AMERICAN VEGETARIAN POPULATION
STARTING/ COMPLETION DATE : 06/78 - 06/81 : FUNDING : ESTIMATED - FY78 / $ 235000
TASK CODE=D6078-009 **EPA=R806006-01 ** (GRANT) PRIOR FY /

EPA OFFICER,: NE KUHAL EPA/HERL - CINC
INVESTIGATOR,: RE WILLARD LOMA LINDA UNIV
PLAN ID.....: (AP=6078)(DU=H103) CHARACTERIZATION & TESTING OF WATER & HAZARDOUS SUBSTANCES
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
10-05 RESOURCE CONSERVATION AND RECOVERY ACT
ORDIS CODES,.: RECN-001057 SSIE-GMA 5145 EPA -R806006-01 TASK-D6078-009
ORD -RD10H30-1078 MAND-10-01 MAND-10-05
AP -6078 DU -H103 LABT-HEE

PROJ STATUS,.: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVES: IS THERE A STATISTICALLY SIGNIFICANT DIFFERENCE IN CADMIUM EXPOSURE BETWEEN VEGETARIANS AND NON-VEGETARIANS? APPROACH: LIVING MATCHED VEGETARIANS AND NON-VEGETARIANS IN THE 40 TO 60 YEAR OLD AGE GROUP WILL BE COMPARED BY MEASURING DIETARY CADMIUM INGESTION FOR 1 WEEK, STOOL CADMIUM EXCRETION ON 72 HOUR SPECIMENS, URINE CADMIUM EXCRETION ON 24 HOUR SPECIMENS, AND EVIDENCE OF RENAL TUBULAR IMPAIRMENT BY MEASURING URINE BETA-2-MICROGLOBULIN EXCRETION, BODY ACCUMULATION OF CADMIUM WILL BE COMPARED ON AUTOPSY MATERIAL FROM LIVER AND KIDNEY IN SIMILARLY MATCHED GROUPS. STUDY WILL RUN FOR 3 YEARS LOOKING FOR SIGNIFICANT DIFFERENCES BETWEEN THE VEGETARIAN AND NON-VEGETARIAN POPULATION.

**PROJECT: 03567-MORPHOLOGICAL AND ANATOMICAL RESPONSES OF SELECTED COASTAL MARSH PLANTS TO SOIL MOISTURE FOR DETERMINATION OF WETLAND LIMITS
STARTING/ COMPLETION DATE : 09/78 - 09/80 : FUNDING : ESTIMATED - FY78 / $ 38500
TASK CODE=M608C-222 **EPA=R806013-01 ** (GRANT) PRIOR FY /

EPA OFFICER,: HV KIBBY EPA/ERL - CORVALLIS
INVESTIGATOR,: FR RICHSON OREGON STATE UNIV SCH OF SCI/ATMOS SCI DEPT
RE FRENKEL OREGON STATE UNIV SCH OF SCI/ATMOS SCI DEPT
MILESTONES...: 09/80 -FINAL REPORT
PLAN ID.....: (AP=608C)(DU=H115) MARINE & ESTUARINE ECOLOGICAL PROCESSESS & EFFECTS (IBA 608)
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES,.: RECN-003567 SSIE-ZZ 280 EPA -R806013-01 TASK-M608C-222
ORD -RM10C30-1078 MAND-10-01 AP -608C
DU -H115 LABT-HEE

PROJ STATUS,.: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVE IS TO DETERMINE THEMORPHOLOGICAL AND ANATOMICAL RESPONSES OF SELECTED COASTAL SALT MARSH PLANT SPECIES TO VARYING CONDITIONS OF SOIL MOISTURE IN ORDER TO HELP IDENTIFY WETLAND LIMITS IN OREGON. SELECTED PLANTS GROWING IN THE ECOTONE BETWEEN THE MARSH AND UPLAND ALONG PREVIOUSLY SURVEYED TRANSECTS WILL BE EXAMINED FOR MORPHOLOGICAL AND ANATOMICAL FEATURES WHICH CORRELATE WITH TRANSECT POSITION. PLANTS SHOWING MORPHOLOGICAL AND/OR ANATOMICAL RESPONSES WILL BE EXCHANGE-TRANSPLANTED IN THE FIELD BETWEEN THE LOWER MARSH AND UPPER MARSH POSITIONS WITH DOUBLE CONTROLS. FEATURES WILL BE EXAMINED WITH LIGHT AND SCANNING ELECTRON MICROSCOPY. SEEDINGS WILL BE RAISED UNDER GREENHOUSE CONDITIONS UNDER VARYING SOIL MOISTURE REGIMES TO HELP VALIDATE FIE

**PROJECT: 03614-METHODOLOGY DEVELOPMENT FOR SITING POWER PLANTS

STARTING/ COMPLETION DATE : 08/78 - 07/80 : FUNDING : ESTIMATED - FY78 / $ 76852
TASK CODE=M625A-223 **EPA=R806016-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: EM PRESTON EPA/ERL - CORVALLIS
INVESTIGATOR.: JL DODD COLORADO STATE UNIV NAT RESOURCE ECOLOGY LAB
WK LAUENROTH COLORADO STATE UNIV NAT RESOURCE ECOLOGY LAB
MILESTONES...: 07/80 -FINAL REPORT
PLAN ID.....: (AP-625A)(OU-N140) EFFECTS OF ENERGY-RELATED POLL. ON ORGANISMS & ECOSYSTEMS
FINAL OUTPUT.: REPORT TO DEV. CAPACITY TO PREDICT ECOL. IMPACT OF 0044
COAL-FIRED PLANT EMISSIONS BEFORE DAMAGE. 0044
MANDATE.....: 10-99 GY REORG. ACT 0044
ORDIS CODES..: RECN-003614 SSIE-ZZ 287 EPA -R806016-01 TASK-M625A-223
ORD -RM10C30-1078 MAND-10-99 AP -625A
OU -N140 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVE: DEVELOP METHODS FOR INCORPORATING ECOLOGICAL EFFECTS INFORMATION INTO THE COAL-FIRED POWER PLANT SITING PROCESS. THE METHODOLOGY IS TO BE APPLIED TO THE NORTHERN GREAT PLAINS OR OTHER SIMILAR REGIONS FOR THE PURPOSE OF CLASSIFYING ALL PARTS OF THE REGION ACCORDING TO THEIR ANTICIPATED REDUCTION IN VALUE RESULTING FROM AIR POLLUTION IMPACT FROM COAL-FIRED POWER PLANTS. FINAL OUTPUT: REPORT THAT HELPS DEVELOP THE CAPACITY TO PREDICT THE ECOLOGICAL IMPACTS OF COAL-FIRED POWER PLANTS EMISSIONS BEFORE DAMAGE OCCURS.

**PROJECT: 01915-ATMOSPHERIC TURBULENCE AND POLLUTANT DISPERSION NEAR ROADWAYS

STARTING/ COMPLETION DATE : 07/78 - 06/79 : FUNDING : ESTIMATED - FY78 / $ 54000
TASK CODE=G603A-CA-34 **EPA=R806017 ** (GRANT) PRIOR FY /
EPA OFFICER.: WB PETERSEN EPA/ESRL - RTP
INVESTIGATOR.: ST RAO STATE DIV OF AIR RES ATMOSPHERIC MODELING SECTION
MILESTONES...: 02/80 -RECOMMENDATIONS FOR IMPROVEMENT OF HIGHWAY DISPERSION MODELING
06/79 -FINAL REPORT
PLAN ID.....: (AP=603A)(OU=A125) ATMOSPHERIC PROCESSES AND EFFECTS
FINAL OUTPUT.: FINAL REPORT FROM GRANTEE WITH RECOMMENDATIONS ON H 0036
TH IMPROVE DISPERSION MODELING NEAR ROADWAY. 0036
MANDATE.....: 10-02 CLEAN AIR ACT
CURR. RESULTS: PRELIMINARY WORK HAS BEGUN ON READING THE GM DATA T 0036
AND WRITING COMPUTER CODE FOR ANALYSIS. 0036
ORDIS CODES..: RECN=001915 SSIE-GMA 4906 EPA -R806017 TASK-G603A-CA-34
ORD -RG10830-1078 MAND=10-02 AP -603A
OU -A125 LABT-ALM

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVE: THE MAJOR GOAL OF THIS INVESTIGATION IS TO IMPROVE METHODS OF EVALUATING THE AIR QUALITY ADJACENT TO MAJOR HIGHWAYS. TO THIS END, THE DATA BASES DEVELOPED BY THE GENERAL MOTORS SULFATE DISPERSION EXPERIMENT AND NEW YORK STATE ROAD STUDY WILL BE USED TO STUDY THE STRUCTURE OF TURBULENCE IN THE VICINITY OF THE ROADWAY TO SEE IF THE VARIOUS MECHANISMS RESPONSIBLE FOR THE GENERATION OF TURBULENCE CAN BE PARAMETERIZED INTO GAUSSIAN DISPERSION MODELS. EMPHASIS WILL BE PLACED ON THE IDENTIFICATION OF THE SPACE AND TIME SCALES OF THE HIGHWAY-GENERATED TURBULENCE. THE DATA SETS AVAILABLE FROM THESE TWO STUDIES WILL THEN BE USED FOR CALIBRATION AND EVALUATION OF EXISTING DISPERSION MODELS WITH AND WITHOUT MODIFICATIONS DEVELOPED UNDER THIS GRANT. FINAL OUTPUT: FINAL REPORT FROM GRANTEE WITH RECOMMENDATIONS ON HOW TO IMPROVE DISPERSION MODELING NEAR ROADWAY. RESULTS TO DATE: PRELIMINARY WORK HAS BEGUN ON READING THE GENERAL MOTORS DATA TAPES AND WRITING A COMPUTER CODE FOR ANALYSIS.

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**PROJECT: 03763-DISPERSAL OF COAL DUST FROM TRANS-SHIPMENT & POWER PLANT STORAGE FACILITIES

STARTING/ COMPLETION DATE : 07/78 - 06/80 : FUNDING : ESTIMATED - FY78 / $ 57000
TASK CODE=N625A-085 **EPA=R806020-01 ** (GRANT) PRIOR FY /
EPA OFFICER.: DW KUEHL EPA/ERL - DULUTH
INVESTIGATOR.: M SYDOR UNIV OF MINNESOTA
MILESTONES...: 06/80 -FINAL REPORT
PLAN ID.....: (AP=625A)(OU=N140) EFFECTS OF ENERGY-RELATED POLL. ON ORGANISMS & ECOSYSTEMS
MANDATE.....: 30-99 ISTRY, PHYSICS 0047
ORDIS CODES..: RECN=003763 SSIE-ZZ 254 EPA -R806020-01 TASK-N625A-085
ORD -RN10C30-3078 MAND=30-99 AP -625A
OU -N140 LABT-MEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVES ARE TO CHARACTERIZE, THROUGH PHYSICAL MEASUREMENTS, THE DISPERSION OF COAL DUST PARTICULATES FROM COAL STORAGE FACILITIES AT POWER PLANTS AND SHIPPING TERMINALS, AND TO DETERMINE THROUGH USE OF REMOTE SENSING DATA AND NUMERICAL MODELING THE DEPOSITION RATES OF DUST AS A FUNCTION OF WINDS.

**PROJECT: 02122-DEVELOPMENT OF NEW SAMPLING TECHNIQUES FOR ANALYSIS OF POLAR AND SEMI-POLAR AIR POLLUTANTS AT THE PPT LEVEL

STARTING/ COMPLETION DATE : 03/78 - 09/80 : FUNDING : ESTIMATED - FY78 / $ 50000
TASK CODE=G7128-88-59 **EPA=R806022-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: K KROST EPA/ESRL - RTP
INVESTIGATOR.: A ZLATKIS UNIV OF HOUSTON CHEM DEPT
H SHANFIELD UNIV OF HOUSTON CHEM DEPT

MILESTONES...: 06/79 -INTERIM REPORT
06/80 -2ND INTERIM REPORT
06/81 -FINAL REPORT

PLAN ID.....: (AP-7128)(OU-A130) CHAR. AND MEASUREMENT METHODS DEVELOPMENT (AIR)

MANDATE.....: 10-02 CLEAN AIR ACT

ORDIS CODES..: RECN-002122 SSIE-ZZ 165 EPA -R806022-01 TASK-G7128-88-59
ORD -RG10C30-1078 MAND-10-02 AP -7128
OU -A130 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH

ABSTRACT.....: THE PROPOSED RESEARCH EFFORTS ARE DIRECTED TOWARD RELIABLE AND SIMPLE SAMPLING TECHNIQUES FOR AIR POLLUTANTS PRESENT AT THE PART PER TRILLION LEVEL. IN PARTICULAR, NON-HYDROCARBON, ORGANIC COMPOUNDS ARE OF INTEREST, AND MORE SPECIFICALLY, THOSE WHICH MAY REPRESENT A HEALTH HAZARD (E.G. CARCINOGENS). THE EXPERIMENTAL APPROACH IS TO EXTEND THE USEFULNESS OF THE NOW COMMONLY USED SOLID ADSORBENTS (E.G. TENAX GC), BY COATING THEM WITH ABSORBENTS HAVING FAVORABLE PARTITION COEFFICIENTS AND SELECTIVITY FOR THE CLASSES OF COMPOUNDS OF INTEREST. SOME WORK ALONG THIS LINE HAS BEEN REPORTED IN THE LITERATURE RECENTLY. INITIALLY, RELATIVELY LOW MOLECULAR WEIGHT MODEL COMPOUNDS WILL BE CHOSEN FOR TEST WITH SELECTED ABSORBENTS, IN ORDER TO ACQUIRE SOME KNOWLEDGE OF THE CRITERIA FOR FAVORABLE SELECTIVITY AND HIGH PARTITION COEFFICIENTS. THE SYSTEM DESIGNED WILL BE COMPATIBLE WITH FINAL ANALYSIS BY CAPILLARY COLUMN GAS CHROMATOGRAPHY/MASS SPECTROMETRY.

**PROJECT: 03438-ANIMAL WASTE MANAGEMENT CONFERENCE AND WORKSHOP

STARTING/ COMPLETION DATE : 05/78 - 11/78 : FUNDING : ESTIMATED - FY78 / $ 35340
TASK CODE=L770D-2-18 **EPA=R806025-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: RG KREIS EPA/ERL - ADA
INVESTIGATOR.: RK WHITE OHIO AGRIC R&D CTR AGRIC ENG DEPT
MILESTONES...: 10/78 -FINAL REPORT TO BE SUBMITTED
PLAN ID.....: (AP-770D)(DU-B133) ANIMAL PRODUCTION
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
CURR. RESULTS: PROJECT AWARDED, SEMINAR & WORKSHOP HELD, ROUGH DRA 0040
OF ASSESSMENT PREPARED. 0040
ORDIS CODES..: RECN-003438 SSIE-GMA 5020 EPA -R806025-01 TASK-L770D-2-18
ORD -RL10C30-1078 MAND-10-01 AP -770D
DU -B133 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: A LIVESTOCK WASTE MANAGEMENT SEMINAR AND NEEDS ASSESSMENT WORKSHOP WILL BE HELD DURING THE WEEK OF MAY 22, 1978 IN COLUMBUS, OHIO. THREE NEW PUBLICATIONS WILL BE PRESENTED AND REVIEWED IN DEPTH AT THE SEMINAR. THEY ARE: (1) ENVIRONMENTAL IMPACT RESULTING FROM UNCONFINED ANIMAL PRODUCTION, (2) EVALUATION AND ECONOMIC ANALYSIS OF LIVESTOCK WASTE MANAGEMENT SYSTEMS (NON-NPDES) AND (3) ANIMAL WASTE UTILIZATION ON CROP AND PASTURE LAND. THE NEEDS WORKSHOP WILL ASSESS CURRENT STATUS AND FUTURE RESEARCH NEEDS AND THE PRIORITIES FOR SIX AREAS OF LIVESTOCK PRODUCTION AND WASTE MANAGEMENT. THE NEEDS AREAS WILL INCLUDE THE TOPICS OF THE THREE NEW PUBLICATIONS (ABOVE) AND (4) RESOURCE RECOVERY FROM ANIMAL WASTES (FEED, FUEL, ETC.), (5) ODOR--CAUSE AND ABATEMENT AND (6) CONSERVATION OF ENERGY AND NUTRIENTS IN EXISTING AND NEW MANAGEMENT SYSTEMS. NEEDS ASSESSMENT TASK GROUPS (6 OR 7 PERSONS EACH) WILL PREPARE WORKING PAPERS FOR USE AT THE SEMINAR AND WORKSHOP. A PUBLICATION OF THE SIX NEEDS ASSESSMENTS WILL BE PREPARED. PROJECT HAS BEEN AWARDED, SEMINAR AND WORKSHOP HELD AS SCHEDULED. ROUGH DRAFT OF ASSESSMENT HAS BEEN PREPARED AS OF JULY 1978.

**PROJECT: 00585-REMOVAL OF TOXIC SUBSTANCES FROM WASTEWATERS BY INTEGRATED BIOLOGICAL-ACTIVATED CARBON TREATMENT

STARTING/ COMPLETION DATE : 09/78 - 08/80 : FUNDING : ESTIMATED - FY78 / $ 150000
TASK CODE=C6118-0049 **EPA=R806030-01 ** (GRANT) PRIOR FY /

EPA OFFICER,: JJ WESTRICK EPA/MERL - CINC
INVESTIGATOR,: RJ WEBER UNIV OF MICHIGAN SCH OF ENG
MILESTONES...: 09/80 -INTERIM REPORT ON FIRST TWO YEARS
06/82 -FINAL REPORT ON PROCESS FOR TOXICS CONTROL
PLAN ID.....: (AP=6118)(OU=R106) WASTEWATER TREATMENT TECHNOLOGY PROGRAMS
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN=000585 SSIE-ZZ 396 EPA -R806030-01 TASK-C6118-0049
ORD -RC10C30-1078 MAND-10-01 AP -611M
OU -R106 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE PROPOSED WORK WILL FOCUS ON INTEGRATION OF BIOLOGICAL AND CARBON ADSORPTION TREATMENT PROCESSES TO YIELD A SYSTEM WHICH IS CAPABLE OF COST EFFECTIVE REMOVAL OF TOXIC SUBSTANCES FROM MUNICIPAL AND INDUSTRIAL WASTEWATERS. SPECIFICALLY, THE PROPOSED RESEARCH WOULD INVESTIGATE THE FEASIBILITY, EFFECTIVENESS, AND CRITICAL CONTROL PARAMETERS ASSOCIATED WITH ADDITION OF ACTIVATED CARBON TO CONVENTIONAL ACTIVATED SLUDGE SYSTEMS TO ACCOMPLISH TOXIC SUBSTANCE REMOVAL. CRITICAL PARAMETERS THAT AFFECT REMOVAL OF TOXIC SUBSTANCES IN SUCH APPLICATIONS WILL BE INVESTIGATED, INCLUDING: SLUDGE AGE; MIXED-LIQUOR SUSPENDED SOLIDS; ORGANIC COMPOSITION AND CONCENTRATION OF THE WASTE; HYDRAULIC RETENTION TIME OF THE AERATION BASIN; TYPE AND CONCENTRATION OF TOXIC SUBSTANCES; COMPETITIVE INTERACTIONS OF ORGANIC COMPOUNDS; TYPE AND CONCENTRATION OF ACTIVATED CARBON; AND, INTERACTIVE BIOLOGICAL OXIDATION AND ADSORPTION PROCESSES.

425 A

**PROJECT: 02551-HUMAN CADMIUM EXPOSURE AND CANCER

STARTING/ COMPLETION DATE : 09/78 - 03/80 : FUNDING : ESTIMATED - FY78 / $ 32000
TASK CODE=H601F-8781 **EPA=R806036-01 ** (GRANT) PRIOR FY /

EPA OFFICER,: RJ HORTON EPA/MERL - RTP
INVESTIGATOR,: T KJELLSTROM AUCKLAND UNIV DEPT OF COMM HLTH
MILESTONES...: 03/78 -FINAL REPORT
PLAN ID.....: (AP=601F)(OU=A105) CONTRIBUTION OF ENVIRONMENTAL FACTORS TO CANCER IN HUMANS
MANDATE.....: 10-03 TOXIC SUBSTANCES CONTROL ACT
ORDIS CODES..: RECN=002551 SSIE-GMA 5105 EPA -R806036-01 TASK-H601F-8781
ORD -RH10H30-1078 MAND-10-03 AP -601F
OU -A105 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVES: TO EVALUATE THE OCCURRENCE OF CHRONIC ILLNESS, PARTICULARLY CANCER, IN POPULATION GROUPS WITH EXPOSURE TO HIGH LEVELS OF CADMIUM COMPOUNDS. APPROACH AND PLANS: INCIDENCE OF CANCER MORTALITY, GENERAL AND FOR SELECTED SITES, WILL BE DETERMINED FOR TWO GROUPS EXPOSED TO CADMIUM AT WORK IN METAL EXTRACTION AND IN BATTERY MANUFACTURE. FINDINGS WILL BE COMPARED WITH COMPARABLE DATA FROM UNEXPOSED WORKERS, AND FROM THE GENERAL POPULATION. A SIMILAR STUDY OF GROUPS EXPOSED AT SOMEWHAT LOWER LEVELS IN FOOD IN SELECTED AREAS OF JAPAN WHERE RICE CADMIUM LEVELS ARE HIGH. COMPARISONS WILL BE MADE WITH AREAS WITH LOWER RICE CADMIUM LEVELS.

**PROJECT: 01406-AMMONIA REMOVAL FROM STEEL INDUSTRY WASTEWATER

STARTING/ COMPLETION DATE : 08/78 - 04/79 : FUNDING : ESTIMATED - FY78 / $ 11773
TASK CODE=F610C-349 **EPA=R806041 ** (GRANT) PRIOR FY /

EPA OFFICER.: J RUPPERSBERGE EPA/IERL - RTP
INVESTIGATOR.: FH BIRKNER UNIV OF MARYLAND SCH OF ENG
MILESTONES...: 12/78 -COMPLETE WORK TO DEVELOP POLYMER COATED GLASS FILTER MEDIA
03/79 -COMPLETE LABORATORY SCALE STUDIES ON TREATMENT EFFECTIVENESS
04/79 -FINAL REPORT EVAL. OF INNOVATIVE TREATMENT TECHNOLOGY
PLAN ID.....: (AP=610C)(DU=8118) MATERIALS PRODUCTION, INDUSTRIAL PT. SOURCES (WATER)
FINAL OUTPUT.: DEVELOPMENT AND EVALUATION OF POTENTIAL FOR INNOVAT 0023
TREATMENT TECHNOLOGY. 0023
MANDATE.....: 10-99 A
ORDIS CODES..: RECN-001406 SSIE-ZZ 189 EPA -R806041 TASK-F610C-349
ORD -RF10C30-1078 MAND-10-99 AP -610C
DU -8118 LAST-EMI

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVE/APPROACH: THIS APPROACH TO THE TREATMENT OF AMMONIA CONTAINING STEEL WASTES WILL BE TO DEVELOP A FILTER MEDIUM WHICH HAS A HIGH CAPACITY FOR AMMONIA AND CAN BE EASILY AND ECONOMICALLY REGENERATED OR REACTIVATED IN PLACE. SUCH A MEDIUM SHOULD ALSO BE PHYSICALLY AND CHEMICALLY STABLE SO THAT IT CAN WITHSTAND THE PHYSICAL AND CHEMICAL STRESSES THAT ARE PLACED UPON IT IN A WASTE TREATMENT SYSTEM. THE USE OF A GLASS BEAD MATRIX TO SUPPORT A POLYMER ADSORBATE WHICH IS CAPABLE OF ADSORBING AMMONIA FROM WATER COULD REPRESENT A MAJOR ADVANCE IN THE USE OF FILTRATION PROCESSES FOR THE REMOVAL OF SPECIFIC CHEMICAL CONSTITUENTS FROM WASTEWATERS. THE SUCCESS OF SUCH AN APPROACH RESTS UPON THE SELECTION OF APPROPRIATE POLYMER COATINGS WHICH HAVE A STRONG AFFINITY FOR THE SILICA FILTER MEDIA SUPPORT AND THE CHEMICAL SPECIFICITY TO ENABLE THEM TO REMOVE THE DESIRED CHEMICAL CONSTITUENTS FROM A PARTICULAR WASTEWATER. AMMONIA REMOVAL MAY BE MODELED AND OPTIMIZED WITH REGARD TO FLOW VELOCITY, POLLUTANT CONCENTRATION AND THE SURFACE AREA OF THE ADSORPTION BED. FINAL OUTPUTS: THIS PROJECT WILL HELP DEVELOP AND EVALUATE THE POTENTIAL FOR AN INNOVATIVE WASTE TREATMENT TECHNOLOGY. THE TECHNOLOGY HAS THE POTENTIAL FOR PRODUCING AN EFFLUENT WITH VERY LOW RESIDUAL LEVELS OF AMMONIA. THE BASIC APPROACH FOR THIS TREATMENT TECHNIQUE COULD ALSO LATER BE MODIFIED FOR OTHER POLLUTANTS.

**PROJECT: 00796-ALTERNATE WATER DISINFECTION SCHEMES FOR REDUCED TRIHALOMETHANE FORMATION

STARTING/ COMPLETION DATE : 08/78 - 08/80 : FUNDING : ESTIMATED - FY78 / $ 62964
TASK CODE=C614A-086 **EPA=R806046-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: G LUGSHON EPA/MERL - CINC
INVESTIGATOR.: CA SORBER UNIV OF TEXAS CTR FOR APPL RES & TECH
RF WILLIAMS UNIV OF TEXAS CTR FOR APPL RES & TECH
RE LONGLEY UNIV OF TEXAS CTR FOR APPL RES & TECH
RE MOORE UNIV OF TEXAS CTR FOR APPL RES & TECH

MILESTONES...: 10/78 -CONSTRUCT PILOT SYSTEMS
02/79 -COMPLETE CHLORINE MIXING TESTS
06/79 -COMPLETE CHLORINE - AMONIA TESTS
10/79 -COMPLETE CHLORINE DIOXIDE TESTS
02/80 -DEVELOP PREDICTIVE MODEL FOR PROCESS CONTROL
08/80 -COMPLETE FINAL REPORT

PLAN ID.....: (AP-C14A)(OU-C110) WATER SUPPLY - WATER TREATMENT & SYSTEMS
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-00079G SSIE-GMA 5098 EPA -R806046-01 TASK-C614A-086
ORD -RC10830-1078 MAND-10-01 AP -614A
OU -C110 LABT-ALM

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH

ABSTRACT.....: OBJECTIVES: THE OVERALL OBJECTIVES OF THIS STUDY ARE TO QUANTITATIVELY DESCRIBE THE ROLE OF RAPID MIXING OF DISINFECTANTS INTO DRINKING WATER WITH PARTICULAR REGARD TO MINIMIZING TRIHALOMETHANE PRODUCTION AND OPTIMIZING THE DISINFECTION PROCESS. APPROACH: 1. TO EVALUATE THE EFFECTS OF RAPID MIXING ON DISINFECTION EFFICIENCY AND THM FORMATION AT A MEAN FLOW RATE OF 75 GPM AND DISINFECTANT DOSES OF 0.5, 1.5, AND 5.0 MG/L AS CHLORINE FOR THE FOLLOWING: (A) CHLORINE ALONE ADDED AS THE DISINFECTING AGENT TO THE WATER STREAM AT THE MIXER, (B) CHLORINE ADDED AT THE MIXER AS THE DISINFECTANT FOLLOWED BY THE ADDITION OF AMMONIA AT A CHLORINE TO AMMONIA MOLAR RATIO OF 3:1 AFTER A MEAN CONTACT TIME OF 15 SECONDS FOR THE CHLORINE ALONE WITH THE WATER STREAM, (C) CHLORINE DIOXIDE PLUS CHLORINE IN A 3:1 RATIO ADDED AS THE DISINFECTING AGENT TO THE WATER STREAM AT THE MIXER. 2. TO DEVELOP A GENERAL PREDICTIVE MODEL FOR PROCESS CONTROL. THE MODEL WILL ADDRESS THE EFFICACY AND ECONOMY OF THE DISINFECTANTS STUDIED IN RELATION TO MAXIMIZING DISINFECTION EFFICIENCY AND MINIMIZING THM PRODUCTION. 3. TO EVALUATE THE ROLE OF CHLOROPHYLL-A AND HUMIC ACIDS AS THM PRECURSORS. 4. TO DETERMINE ENTEROVIRUS BACKGROUND CONCENTRATIONS AND TO EVALUATE THE VIRAL INACTIVATION EFFICIENCY OF THE DISINFECTION SCHEMES BEING STUDIED. FUTURE WORK COULD EVALUATE VIRAL INCIDENCE AND SURVIVAL IN THE DISTRIBUTION SYSTEM. CURRENT PLANS: THE SITE FOR THIS STUDY WILL BE THE NEWLY CONSTRUCTED WATER TREATMENT PLANT OF THE CITY OF BOERNE, TEXAS. ITS SOURCE IS A NEW RESERVOIR FED BY RUN-OFF FROM THE CIBOLO CREEK WATERSHED OF 12,500 ACRES. A SIDE STREAM OF FILTERED, NONDISINFECTED WATER WILL BE USED FOR THIS STUDY. NORMAL PRECHLORINATION PRACTICES OF THE PLANT WILL BE DISCONTINUED DURING DATA COLLECTION RUNS. PROVISIONS WILL BE MADE FOR SEEDING THE 75 GPM PROTOTYPE DISINFECTION SYSTEM WITH THM PRECURSOR AND NONPATHOGENIC ORGANISMS.

**PROJECT: 00580-EVALUATION OF ACTIVATED BIO-FILTER WASTEWATER TREATMENT PROCESS AT HELENA, MONTANA

STARTING/ COMPLETION DATE : 08/78 - 08/80 : FUNDING : ESTIMATED - FY78 / $ 60000
TASK CODE=C6118-0043 **EPA=R806047 ** (GRANT) PRIOR FY /

EPA OFFICER,: MC MRENNER EPA/MERL - CINC
INVESTIGATOR,: K RAKNESS HELENA CITY PUB. UTIL. DIV
D NISBET HELENA CITY PUB. UTIL. DIV
H HEGG HELENA CITY PUB. UTIL. DIV
A WETSTEIN HELENA CITY PUB. UTIL. DIV
B HEMPHILL HELENA CITY PUB. UTIL. DIV
W IKELAN HELENA CITY PUB. UTIL. DIV
MILESTONES...: 02/78 -FIELD WORK COMPLETED
PLAN ID.....: (AP-6118)(DU-B106) WASTEWATER TREATMENT TECHNOLOGY PROGRAMS
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-000580 SSIE-ZZ 394 EPA -R806047 TASK-C6118-0043
ORD -RC10C30-1078 MAND-10-01 AP -6118
DU -B106 LABT-ALM

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE CITY OF HELENA, MONTANA, USES AN ACTIVATED BIO-FILTER (ABF) PROCESS FOR SECONDARY TREATMENT OF ITS WASTEWATER. THE ABF SYSTEM IS A RELATIVELY NEW PROCESS, AND FULL-SCALE PERFORMANCE INFORMATION AT DESIGN LOADING CONDITIONS IS NOT AVAILABLE. THE PRIMARY OBJECTIVE OF THIS RESEARCH EFFORT WILL BE TO DEVELOP OPERATION AND PERFORMANCE INFORMATION FOR THE ABF PROCESS LOADED AT THE MANUFACTURER'S CURRENT DESIGN LOADING CONDITIONS DURING THE MOST CRITICAL PERFORMANCE PERIOD OF THE YEAR, WINTER OPERATION. OTHER PROJECT OBJECTIVES ARE TO DETERMINE THE RELATIVE CAPABILITIES OF THE BIO-CELL TOWER AND THE SHORT-TERM AERATION BASIN UNITS IN SHARING THE ORGANIC LOADS TO THE ABF SYSTEM AND TO DOCUMENT SYSTEM ENERGY REQUIREMENTS. THE RESEARCH APPROACH IS TO OPERATE THE ABF SYSTEM UNDER THREE DIFFERENT LOADING CONDITIONS; HALF-DESIGN LOAD (CURRENT PLANT LOAD), INTERMEDIATE LOAD, AND FULL DESIGN LOAD. AN ADEQUATE TIME PERIOD FOR EACH OPERATING CONDITION IS PLANNED TO INSURE SYSTEM ACCLIMATION IS ACHIEVED AT A CHANGED LOADING CONDITION AND TO DETERMINE SYSTEM STABILITY AT THAT LOADING CONDITION. DURING EACH LOADING CONDITION, PLANT PERFORMANCE, OPERATING CHARACTERISTICS, AND ENERGY REQUIREMENTS WILL BE DOCUMENTED BUT THE MAJOR EMPHASIS WILL BE TO OPERATE THE SYSTEM SO AS TO OPTIMIZE SYSTEM BODS AND TSS REMOVAL CAPABILITIES.

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**PROJECT: 01734-STUDIES OF PLANETARY BOUNDARY LAYER

STARTING/ COMPLETION DATE : 08/78 - 03/81 : FUNDING : ESTIMATED - FY78 / $ 102000
TASK CODE=G603A-AB-05 **EPA=R806048-01 ** (GRANT) PRIOR FY /

EPA OFFICER,: FS HINKOWSKI EPA/ESRL - RTP
INVESTIGATOR,: AK BLACKADAR PENNSYLVANIA STATE UNIV EARTH & MINERAL SCI/METEOR DEPT
DW THOMSON PENNSYLVANIA STATE UNIV EARTH & MINERAL SCI/METEOR DEPT
MILESTONES...: 09/80 -FINAL REPORT
PLAN ID.....: (AP-603A)(DU-A125) ATMOSPHERIC PROCESSES AND EFFECTS
MANDATE.....: 10-02 CLEAN AIR ACT
ORDIS CODES..: RECN-001734 SSIE-GMA 4914 EPA -R806048-01 TASK-G603A-AB-05
ORD -RG10830-1078 LABN-G603A-AB-19 MAND-10-02
AP -603A DU -A125 LABT-ALM

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THIS STUDY OF THE PLANETARY BOUNDARY LAYER (PBL) WILL INCLUDE FURTHER DEVELOPMENT OF NEW TREATMENTS OF THE CONVECTIVE MIXED LAYER, THE SURFACE ENERGY BUDGET AND THE SURFACE FLUX OF A POLLUTANT. A SECOND PART OF THE STUDY WILL BE A MULTI-PLATFORM FIELD STUDY OF THE (PBL).

**PROJECT: 01686-AIRBORNE SOLAR RADIATION MEASUREMENT FOR STATE

STARTING/ COMPLETION DATE : 08/78 - 06/79 : FUNDING : ESTIMATED - FY78 / $ 12000
TASK CODE=G603A-AA-134 **EPA=R806048-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: F POOLER EPA/ESRL - MTP
INVESTIGATOR.: BA ALBRECHT PENNSYLVANIA STATE UNIV EARTH & MINERAL SCI/METEOR DEPT
MILESTONES...: 08/78 -COMPLETE FIELD MEASUREMENTS
11/78 -MEASURED DATA AVAILABLE TO OTHER INVESTIGATORS
06/79 -REPORT ON RADIANT ENERGY BALANCES
PLAN ID.....: (AP-603A)(OU-A125) ATMOSPHERIC PROCESSES AND EFFECTS
FINAL OUTPUT.: RADIATION DATA FOR METEOROLOGICAL CONDITIONS FOUND 0031
ANALYSES OF BOUNDARY LAYER RADIATION BALANCES.. 0031
MANDATE.....: 10-02 CLEAN AIR ACT 0031
CURR. RESULTS: FIELD WORK PERFORMED 8/78
ORDIS CODES..: RECN-001686 SSIE-GMA 4916 EPA -R806048-01 TASK-G603A-AA-134
ORD -RG10R30-1078 MAND-10-02 AP -603A
OU -A125 LABT-ALM

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THIS TASK IS PART OF A LARGE PROGRAM TO DETERMINE TRANSPORT, TRANSFORMATION, AND REMOVAL PROCESSES AND RATES AFFECTING ATMOSPHERIC CONCENTRATIONS OF SULFUR COMPOUNDS. INITIAL EMPHASIS IS ON STUDIES OF DEFINABLE PLUMES OUT TO TIMES AND DISTANCES OF 24 HRS, AND 500 KM, RESPECTIVELY. MEASUREMENTS OF SOLAR AND LONGWAVE (THERMAL) RADIATION WILL BE MADE USING UPWARD AND DOWNWIND FACING SENSORS TO CHARACTERIZE THE RADIANT FLUXES AND FLUX DIVERGENCE WHICH ARE FUNDAMENTAL PARAMETERS AFFECTING BOUNDARY LAYER STRUCTURE. OUTPUT OF THIS TASK WILL BE RADIATION DATA FOR A VARIETY OF METEOROLOGICAL CONDITIONS ENCOUNTERED DURING THE STUDY PERIOD, AND ANALYSES OF THE BOUNDARY LAYER RADIATION BALANCES.

**PROJECT: 00040-RECOVERY STUDIES OF PESTICIDES FOR SURFACE AND DRINKING WATERS

STARTING/ COMPLETION DATE : 06/78 - 06/83 : FUNDING : ESTIMATED - FY78 / $ 24658
TASK CODE=A614 -41 **EPA=R806049-01 ** (GRANT) PRIOR FY77 / $ 67000

EPA OFFICER.: JJ LICHTENBERG EPA/EMSL - CINC
INVESTIGATOR.: TF MCGRATH SUSQUEHANNA UNIV
DH PUTTER SUSQUEHANNA UNIV
MILESTONES...: 06/79 -REPORT ON ACCURACY AND PRECISION FOR SELECTED PESTICIDES
06/80 -REPORT ON ACCURACY AND PRECISION FOR SELECTED PESTICIDES
06/81 -REPORT ON ACCURACY AND PRECISION FOR SELECTED PESTICIDES
06/82 -REPORT ON ACCURACY AND PRECISION FOR SELECTED PESTICIDES
06/83 -REPORT ON ACCURACY AND PRECISION FOR SELECTED PESTICIDES
PLAN ID.....: (AP=614)(DU=C110) PUBLIC SECTOR ACTIVITIES- WATER SUPPLY
MANDATE.....: 10-13 SOLID WASTE DISPOSAL ACT
CURR. RESULTS: 1976 AND 77 REPORTS RECEIVED. DATA FOR 33 COMPOUND 0001
OBTAINED. 0001
ORDIS CODES..: RECN-000040 SSIE-GMA 5084 EPA -R806049-01 TASK-A614 -41
ORD -RA10B30-1078 MAND-10-13 AP -614
DU -C110 LABT-MTS

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THIS PROJECT INVOLVES ACQUISITION OF ACCURACY AND PRECISION DATA FOR A VARIETY OF ORGANOCHLORINE AND ORGANOPHOSPHORUS PESTICIDES FROM DRINKING WATER AND SURFACE WATER. THE OFFICIAL EPA METHODS, USING LIQUID-LIQUID EXTRACTION AND GAS CHROMATOGRAPHIC (ELECTRON CAPTURE AND FLAME PHOTOMETRIC) ANALYSIS WILL BE EMPLOYED. FORTY-TWO COMPOUNDS, SELECTED ON THE BASIS OF EITHER THEIR INCLUSION IN THE EPA OR BECAUSE OF THEIR CURRENT INTEREST TO THE EPA AND THE PUBLIC, WILL BE STUDIED. THE CONCENTRATION LEVELS WILL RANGE FROM THE LOWER LIMITS OF DETECTION (SOME AS LOW AS 1 NG PER LITER) UP TO 1000 TIMES THE LOWER LIMITS. THESE COMPOUNDS WILL BE ANALYZED BOTH BEFORE AND AFTER FLORISIL TREATMENT. A MINIMUM OF SEVEN REPLICATES WILL BE RUN FOR EACH COMPOUND STUDIED. THE MAIN EMPHASIS OF THE PROPOSED PROJECT WILL BE APPLIED INITIALLY TO THE DRINKING WATER STUDY. SURFACE WATERS WILL BE STUDIED ONLY AFTER THE DRINKING WATER STUDY HAS BEEN COMPLETED. A LATTER PHASE OF THE OVERALL PROJECT WILL STUDY ADDITIONAL EXTRACTION SOLVENTS. IN THE FINAL YEARS OF THIS PROPOSAL, WE WOULD LIKE TO EXTEND THIS INVESTIGATION TO THE AREA OF ORGANONITROGEN COMPOUNDS. 1976 AND 1977 REPORTS RECEIVED. DATA FOR 33 COMPOUNDS HAVE BEEN OBTAINED.

**PROJECT: 01381-TREATMENT OF GASEOUS EMISSIONS FROM STEELPLANTS CONTAINING SMALL CONCENTRATION OF HYDROCARBON VAPORS
STARTING/ COMPLETION DATE : 08/78 - 05/79 : FUNDING : ESTIMATED - FY78 / $ 10500
TASK CODE=F604C-342 **EPA=R806050 ** (GRANT) PRIOR FY /

EPA OFFICER.: J RUPPENSHERGE EPA/IERL - RTP
INVESTIGATOR.: J SZEKELY MIT ELEC ENG DEPT
MILESTONES...: 12/78 -COMPLETE EXPERIMENTS TO DEFINE OPTIMAL OPERATING TEMPERATURE
03/79 -COMPLETE COMPARISON OF POROUS ALUMINA VS. CHARCOAL
04/79 -COMPLETE MATHEMATICAL MODEL AND PILOT PLANT PLANNING
05/79 -COMPLETE FINAL REPORT ON TREATMENT OPTIMIZATION AND EFFECTIVENESS
PLAN ID.....: (AP=604C)(DU=A128) MATERIALS PRODUCTION, INDUSTRIAL PT. SOURCES (AIR)
FINAL OUTPUT.: INITIAL DEVELOPMENT AND EVAL. OF ABSORPTION SYSTEM. 0023
MANDATE.....: 30-99 POLLUTION CONTROL 0023
ORDIS CODES..: RECN-001381 SSIE-ZZ 193 EPA -R806050 TASK-F604C-342
ORD -RF10C30-3078 MAND-30-99 AP -604C
DU -A128 LABT-EMI

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVE/APPROACH: PERFORM FUNDAMENTAL RESEARCH NECESSARY TO DEVELOP AN EFFICIENT TREATMENT TECHNOLOGY TO REMOVE HYDROCARBON CONTAMINANTS FROM IRON AND STEEL PLANT EMISSIONS, ESPECIALLY FROM SINTER PLANTS AND OIL TEMPERING OPERATIONS. FINAL OUTPUT: THIS PROJECT WILL PROVIDE INITIAL DEVELOPMENT AND EVALUATION OF AN ABSORPTION SYSTEM USING EITHER POROUS ALUMINA OR CHARCOAL FOR THE REMOVAL OF LOW CONCENTRATIONS OF HYDROCARBON VAPORS. THE FINAL REPORT WILL PRESENT FINDINGS OF THE LABORATORY EXPERIMENTS AND RECOMMENDATIONS. RESULTS TO DATE: THIS PROJECT IS NOT YET ACTIVE. THE GRANT OFFER IS EXPECTED IN THE LAST QUARTER OF FY 78.

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**PROJECT: 03765-CHEMICAL AND BIOLOGICAL CHARACTERIZATION OF OIL SHALE PROCESSING AND COAL CONVERSION EFFLUENTS
STARTING/ COMPLETION DATE : 07/78 - 06/79 : FUNDING : ESTIMATED - FY78 / $ 157800
TASK CODE=N625A-087 **EPA=R806051-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: LH MUELLER EPA/ERL - DULUTH
INVESTIGATOR.: RK SKOGERBOE COLORADO STATE UNIV CHEM/ELEC ENG DEPTS
PLAN ID.....: (AP=625A)(DU=N140) EFFECTS OF ENERGY-RELATED POLL. ON ORGANISMS & ECOSYSTEMS
MANDATE.....: 30-99 ISTRY-BIOLOGY 0047
ORDIS CODES..: RECN-003765 SSIE-GMA 5211 EPA -R806051-01 TASK-N625A-087
ORD -RN10B30-3078 MAND-30-99 AP -625A
DU -N140 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE UVERALLL OBJECTIVE IS TO PROVIDE PREDICTIVE INFORMATION ABOUT THE EFFECTS OF POLLUTANTS FROM OIL SHALE PROCESSING AND COAL CONVERSION ON SURFACE WATERS, AND THE AQUATIC BIOTA. THE THREE AREAS OF INVESTIGATION INCLUDE: (1) CHEMICAL CHARACTERIZATION OF EFFLUENTS AND BYPRODUCTS ASSOCIATED WITH EACH OF THE ABOVE ENERGY DEVELOPMENT AREAS; (2) FIELD SURVEYS AND ANALYSES OF AQUATIC ORGANISMS IN STREAMS WHICH ARE, OR MAY BE, IMPACTED BY THESE EFFLUENTS; AND (3) LABORATORY BIOASSAYS OF KNOWN AND POTENTIAL TOXICANTS ASSOCIATED WITH THESE EFFLUENTS.

**PROJECT: 00008-AUTOMATED LOW-COST GC/MS PROTOCOL FOR MONITORING ORGANICS IN DRINKING WATER

STARTING/ COMPLETION DATE : 00/78 - 08/80 : FUNDING : ESTIMATED - FY78 / $ 50000
TASK CODE=A612 -08 **EPA=R806053-01 ** (GRANT) PRIOR FY /

EPA OFFICER,: WL RUDDE EPA/EMSL - CINC
INVESTIGATOR,: SS FRATONI S R I INTERNATL
DM COULSON S R I INTERNATL
P ROLAND S R I INTERNATL
O STIVERS S R I INTERNATL
MILESTONES...: 08/79 -DEVELOP FEASIBILITY APPROACH FOR PURGEABLE ORGANICS
08/80 -EXPAND PROTOCOL TO INCLUDE HEAVY ORGANICS
08/80 -DOCUMENT THE PROTOCOL FINAL REPORT
PLAN ID.....: (AP-612)(DU-D110) MEASUREMENT TECHNIQUES AND EQUIPMENT STANDARDIZATION
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-000008 SSIE-ZZ 464 EPA -R806053-01 TASK-A612 -08
ORD -RA10C51-1078 MAND-10-01 AP -612
DU -D110 LABT-MTS

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
COMMENT.....: A612 - $150001 A621 - $34000 0000
ABSTRACT.....: THE OBJECTIVE OF THIS PROPOSED WORK IS TO DEVELOP A COST-EFFECTIVE PROTOCOL FOR MONITORING SPECIFIC ORGANICS IN RAW AND FINISHED DRINKING WATER AT INDIVIDUAL WATER UTILITIES. SPECIFIC CRITERIA FOR THE PROTOCOL INCLUDE INITIAL CAPITAL EQUIPMENT COST OF ABOUT $40,000, BE USUABLE BY A LABORATORY TECHNICIAN, AND GIVE QUANTITATIVE RESULTS FOR A BROAD RANGE OF SPECIFIC SUBSTANCES. THE APPROACH WILL BE TO COMBINE SRI'S ORGANIC SCREENING PROTOCOL, DEVELOPED FOR THE NATIONAL SCREENING PROGRAM FOR ORGANICS IN DRINKING WATER, WITH A HEWLETT PACKARD 59928 LOW-COST GAS CHROMATOGRAPHY/MASS SPECTROMETRY SYSTEM. THE PROPOSED PROGRAM WILL BE CONDUCTED IN THREE PHASES. IN THE INITIAL PHASE (YEAR 1), SRI WOULD DETERMINE THE FEASIBILITY OF THE APPROACH AND APPLY THE PROCEDURES TO PURGEABLE ORGANICS ANALYSIS. SOFTWARE WOULD BE DEVELOPED TO AUTOMATE THE INSTRUMENT OPERATION AND DATA ANALYSIS. RAW AND FINISHED DRINKING WATER SAMPLES WOULD BE ANALYZED AND QUALITY CONTROL PROCEDURES DEVELOPED. PHASE II WOULD EXPAND THE PROTOCOL TO INCLUDE HIGHER MOLECULAR WEIGHT VOLATILE ORGANICS EXTRACTED FROM THE WATER AND ANALYZED BY CAPILLARY COLUMN GC/MS. PHASE III WILL INVOLVE DOCUMENTING THE PROTOCOL.

**PROJECT: 04308-V INTERNATIONAL CONGRESS OF ACAROLOGY

STARTING/ COMPLETION DATE : 08/78 - 08/79 : FUNDING : ESTIMATED - FY78 / $ 6000
TASK CODE=X771E-001 **EPA=R806057-01 ** (GRANT) PRIOR FY /

EPA OFFICER,: KJ HOOD EPA/HDQTRS- OHEE
INVESTIGATOR,: JG RODRIGUEZ UNIV OF KENTUCKY NAT RES & ENV PROT
PLAN ID.....: (AP-771E)(DU-E120) INTEGRATED PEST MANAGEMENT
MANDATE.....: 10-06 FEDERAL INSECTICIDE, FUNGICIDE AND RODENTICIDE AC 0060
20-99 PROG. PLANNING
ORDIS CODES..: RECN-004308 SSIE-ZZ 320 EPA -R806057-01 TASK-X771E-001
ORD -RX10D30-5078 MAND-10-06 MAND-20-99
AP -771E DU -E120 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
COMMENT.....: SPLIT FUNDING ORD $1000, OPP - $5000 0060
ABSTRACT.....: FUNDING IS REQUESTED TO ASSIST THE ORGANIZING COMMITTEE TO DEVELOP THE V INTERNATIONAL CONGRESS OF ACAROLOGY TO BE HELD AUGUST 6-13, 1978 AT MICHIGAN STATE UNIVERSITY, EAST LANSING. FINANCIAL ASSISTANCE IS REQUESTED FOR TWO MAIN EXPENDITURES: TO ASSIST CONGRESS PARTICIPANTS WHO MAY NEED FINANCIAL ASSISTANCE IN GETTING TO THE CONGRESS AND TO ASSIST IN PUBLICATION OF THE CONGRESS PROCEEDINGS.

**PROJECT: 03224-VERIFICATION OF A PESTICIDE TRANSPORT AND BIOACCUMULATION MODEL

STARTING/ COMPLETION DATE : 10/78 - 09/81 : FUNDING : ESTIMATED - FY78 / $ 48347
TASK CODE=K7708-463 **EPA=R806059-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: TO HARNELL EPA/ERL - ATHENS
INVESTIGATOR.: JL SCHNOOR UNIV OF IOWA ENG DEPT
DB MCDONALD UNIV OF IOWA ENG DEPT
MILESTONES...: 10/79 -INTERIM REPORT - PHASES 1 & 2
10/80 -INTERIM REPORT - PHASE 3
10/81 -FINAL REPORT
PLAN ID.....: (AP=7708)(DU=H133) NON-IRRIGATED CROP PRODUCTION
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN=003224 SSIE-GMA 5015 EPA -R806059-01 TASK-K7708-463
ORD -RK10H30-1078 MAND-10-01 AP -7708
DU -H133 LABT-ALM

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE PURPOSE OF THIS RESEARCH IS TO PROVIDE VERIFICATION OF THE STANFORD RESEARCH INSTITUTE (SRI) MODEL FOR A NUMBER OF DIFFERENT PESTICIDES. PESTICIDE RESIDUE DATA (FISH, SEDIMENT, AND WATER) THAT HAVE BEEN COLLECTED FROM THE CORALVILLE RESERVOIR IN IOWA DURING 1968-1977 WILL BE USED. THE PROJECT HAS THREE OBJECTIVES: (1) TO CALIBRATE AND VERIFY THE SRI MODEL FOR CORALVILLE RESERVOIR, (2) TO EVALUTE AND, IF NECESSARY, IMPROVE THE MODEL FORMULATIONS AND EASE OF USE, AND (3) TO USE THE MODEL TO ASSESS THE IMPROVEMENTS IN BIOTA AND WATER QUALITY THAT WOULD ACCRUE FROM VARIOUS CONTROL STRATEGIES. THERE WILL BE FOUR PHASES TO THE PROJECT: (1) DATA REDUCTION AND AALYSIS, (2) SOFTWARE DEVELOPMENT, (3) CALIBRATION, VERIFICATION, AND EVALUATION OF THE MODEL, AND (4) SIMULATION OF SCENARIOS OF DECREASED PESTICIDE LOAD. PHASES (1) AND (2) WILL BE DONE IN THE FIRST YEAR OF THE PROJECT WITH PHASE (3) TAKING PLACE IN THE SECOND YEAR AND PHASE (4) IN THE THIRD YEAR.

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**PROJECT: 00511-INVESTIGATION OF FLUID BED COMBUSTION OF MUNICIPAL SOLID WASTE

STARTING/ COMPLETION DATE : 06/78 - 06/79 : FUNDING : ESTIMATED - FY78 / $ 100000
TASK CODE=R6248-674 **EPA=R806061-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: RA OLEXSEY EPA/IERL - CINC
INVESTIGATOR.: RH EUSTIS STANFORD UNIV INST FOR PLASMA RES
MILESTONES...: 06/79 -FINAL REPORT RECEIVED
PLAN ID.....: (AP=6248)(DU=L110) ENVIRONMENTAL ASPECTS OF ENERGY CONSERVATION/ADVANCED ENERGY
MANDATE.....: 10-99 -NUCLEAR ENERGY) PL 93-577 (RCRA) PL 94-580 0011
10-05 RESOURCE CONSERVATION AND RECOVERY ACT
20-14 U&A FOR SOLID WASTE
ORDIS CODES..: RECN-000511 SSIE-ZZ 426 EPA -R806061-01 TASK-R6248-674
ORD -RB10C30-5078 MAND-10-99 MAND-10-05
MAND-20-14 AP -6248 DU -L110 LABT-EMI

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: FLUID BED COMBUSTION HAS BEEN SHOWN TO BE A PROMISING METHOD FOR OXIDATION OF HETEROGENOUS FUELS AND THE PRESENT PROGRAM WILL INVESTIGATE THE COMBUSTION BED WILL BE ACCOMPLISHED BY WATER-COOLED TUBES IN THE BED AND FREEBOARD AND COMBUSTION CHARACTERISTICS INCLUDING EMISSIONS WILL BE MONITORED. EXPERIENCE WITH WATER-WALL MSW INCINERATORS HAS SHOWN CORROSION TO BE A CONSIDERATION AND EXPERIMENTS IN THE FLUID BED WILL INVESTIGATE THIS PHENOMENA. THE EXPERIMENTS WILL BE MADE IN A 7 SQ. FT. FLUID BED COMBUSTOR LOCATED AT THE COMBUSTION POWER COMPANY IN MENLO PARK, CALIFORNIA. AFTER PRELIMINARY EXPERIMENTS TO OPTIMIZE OPERATING PARAMETERS, TWO 150 HOUR TESTS WILL BE CONDUCTED. THE BED TEMPERATURE WILL BE HELD AT ABOUT 1400 DEGREES F AND THE IN BED CORROSION SAMPLES WILL BE MAINTAINED AT ABOUT 575 DEGREES F. FREEBOARD CORROSION SAMPLES WILL BE MAINTAINED AT 600 DEGREES F FOR THE TEST PERIOD.

**PROJECT: 01050-STUDY OF MICROBIAL AEROSOLS EMITTED FROM WATER RECLAMATION PLANT

STARTING/ COMPLETION DATE : 07/78 - 08/80 : FUNDING : ESTIMATED - FY78 / $ 130000
TASK CODE=D607A-051 **EPA=R806062-01 ** (GRANT) PRIOR FY /

EPA OFFICER..: W JAKUBOWSKI EPA/HERL - CINC
INVESTIGATOR..: KE FANNIN I I T RES INST
JD FENTERS I I T RES INST
MILESTONES...: 07/79 -ANNUAL REPORT
08/80 -FINAL REPORT - MICROORGANISM LEVELS IN AIR FROM WATP
PLAN ID.....: (AP-607A)(DU-B103) HEALTH EFFECTS: TREATMENT & DISPOSAL OF WASTEWATER & SLUDGE
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
30-99 BIOLOGY
0021
ORDIS CODES..: RECN-001050 SSIE-GMA 5140 EPA -R806062-01 TASK-D607A-051
ORD -RD10B30-5078 MAND-10-01 MAND-30-99
AP -607A DU -B103 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVE OF THIS STUDY IS TO DETERMINE THE OCCURRENCE OF SELECTED MICROORGANISMS IN AEROSOLS IN THE VICINITY OF THE O'HARE WATER RECLAMATION PLANT (OWRP) LOCATED IN DES PLAINES, ILLINOIS, DURING THE FALL AND SPRING MONTHS PRECEDING AND FOLLOWING INITIATION OF OPERATIONS. THE STUDY WILL BE CONDUCTED IN ORDER TO OBTAIN DATA ON THE MICROBIOLOGICAL CONTENT OF AEROSOLS FROM MID AUGUST TO MID NOVEMBER AND FROM MID-MARCH TO MID-JUNE. BOTH DAY AND NIGHT SAMPLES WILL BE TAKEN AT FOUR SITES TO DETERMINE BACTERIAL AND COLIPHAGE CONCENTRATIONS AND AT TWO SITES TO ESTIMATE THE CONCENTRATIONS OF ANIMAL VIRUSES. ONE SITE WILL BE LOCATED UPWIND AND THE REMAINING SITES DOWNWIND OF THE WASTEWATER AERATION TANKS. BASED UPON METEOROLOGICAL CONDITIONS DURING THE SAMPLING PERIOD, DURING EACH SAMPLING TRIAL, AIR SAMPLES WILL BE COLLECTED WITH SLIT SAMPLERS, MULTISTAGED IMPACTORS, AND LARGE VOLUME AIR SAMPLERS. DEPENDING UPON THE SPECIFIC ASSAY PROCEDURE THE MICROORGANISMS WILL BE ENUMERATED EITHER BY DIRECT COLONY COUNT OR ESTIMATES BY THE MOST PROBABLE NUMBER METHOD.

**PROJECT: 01407-TRACE HEAVY METALS REMOVAL WITH FERRATES

STARTING/ COMPLETION DATE : 08/78 - 06/79 : FUNDING : ESTIMATED - FY78 / $ 14126
TASK CODE=F610C-350 **EPA=R806064 ** (GRANT) PRIOR FY /

EPA OFFICER.: J RUPPERSBERGE EPA/IERL - RTP
INVESTIGATOR.: JA FITZPATRICK NORTHWESTERN UNIV CIV ENG DEPT
TD WAITE NORTHWESTERN UNIV CIV ENG DEPT
MILESTONES...: 11/78 -SELECT PLANTS FOR WASTEWATER SAMPLES AND REVIEW LITERATURE
05/79 -COMPARE FERRATE AND LIME PRECIPITATION STUDIES
06/79 -FINAL REPORT PROVIDING EVALUATION OF THIS TECHNOLOGY
PLAN ID.....: (AP=610C)(OU=R118) MATERIALS PRODUCTION, INDUSTRIAL PT. SOURCES (WATER)
FINAL OUTPUT.: DEVELOPMENT AND EVALUATION OF WASTE TREATMENT TECHN 0023
0023
MANDATE.....: 10-99 A
ORDIS CODES..: RECN=001407 SSIE-ZZ 188 EPA -R806064 TASK=F610C-350
ORD -RF10C30-1078 MAND=10-99 AP -610C
OU -R118 LABT-EMI

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVE/APPROACH: THE PRINCIPAL OBJECTIVE OF THE PROJECT IS TO DETERMINE THE REMOVAL OF SEVERAL HEAVY METALS FROM ACTUAL AND SIMULATED IRON AND STEEL PRODUCTION WASTEWATERS USING FERRATE. TESTS ARE CARRIED OUT AT BENCH SCALE USING JAR TEST PROCEDURES. FERRATE AND LIME REAGENTS WILL BE ADDED IN VARIOUS COMBINATIONS AND SEQUENCES AND SUSPENDED SOLIDS AND SPECIFIC HEAVY METAL REMOVAL MEASURED. RADIO LABELED METALS WILL BE EMPLOYED AND SPECIFIC LIGAND CONCENTRATIONS WILL BE VARIED IN MODEL WASTEWATER STUDIES. INFORMATION ON THE MECHANISM OF HEAVY METALS REMOVAL BY FERRATE WILL BE OBTAINED BY MEASURING PROPERTIES OF THE PRECIPITATED FERRIC HYDROUS OXIDES. RESULTS WILL BE COMPARED TO CURRENT AND ANTICIPATED PRACTICE IN TERMS OF EFFECTIVENESS AND COST. FINAL OUTPUT: THIS PROJECT WILL HELP DEVELOP AND EVALUATE AN INNOVATIVE WASTE TREATMENT TECHNOLOGY. THE FINAL REPORT WILL PRESENT FINDINGS OF THE BENCH SCALE EXPERIMENTS AND RECOMMENDATIONS.

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**PROJECT: 04307-IN VIVO ANALYSIS OF UV-B INDUCED PHOTOOXIDATIONS

STARTING/ COMPLETION DATE : 08/78 - 07/80 : FUNDING : ESTIMATED - FY78 / $ 42500
TASK CODE=X751A-002 **EPA=R806066-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: - FORZIATI EPA/HDQTRS- OHEE
INVESTIGATOR.: NI KRINSKY TUFTS UNIV SCH OF MED/BIOCHEM & PHARM
MILESTONES...: 02/79 -DEVELOP TECH. TO QUANTIFY SEPARATION OF OXID. PRODUCTS OF CHOLEST E
08/79 -DEVELOP AND APPLY METHODOLOGY FOR RADIOACTIVE LABELLING OF MICE
01/80 -COMPLETE IRRADIATION OF MICE AND IDENTIFICATION OF METABOLITES
05/80 -SUBMIT DRAFT FINAL REPORT
07/80 -SUBMIT FINAL REPORT
PLAN ID.....: (AP=751A)(OU=) * NO TEXT FOUND **
MANDATE.....: 10-02 CLEAN AIR ACT
ORDIS CODES..: RECN=004307 SSIE-GMA 5010 EPA -R806066-01 TASK=X751A-002
ORD -RX10830-1078 MAND=10-02 AP -751A
PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVE OF THIS RESEARCH PROPOSAL IS TO IDENTIFY THE TYPE OF PHOTOCHEMICAL OXIDATION WHICH OCCURS IN VIVO WHEN ANIMALS ARE SUBJECTED TO UV-B IRRADIATION. THIS OBJECTIVE WILL BE APPROACHED BY STUDYING THE OXIDATION PRODUCTS OF ENDOGENOUS CHOLESTEROL IN THE SKIN OF MICE. ANALYSIS OF THESE PRODUCTS WILL ENABLE US TO ASCERTAIN IF THE PRIMARY PHOTOCHEMICAL PATHWAY OF UV-B IRRADIATION OCCURS BY MEANS OF A TYPE I OR TYPE II REACTION.

**PROJECT: 01801-EXPERIMENTAL STUDY OF AEROSOL FORMATION MECHANISM IN A CONTROLLED ATMOSPHERE

STARTING/ COMPLETION DATE : 08/78 - 08/81 : FUNDING : ESTIMATED - FY78 / $ 70000
TASK CODE=G603A-AC-15 **EPA=R806070-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: JL DURHAM EPA/ESRL - RTP
INVESTIGATOR.: DL FOX UNIV OF NORTH CAROLINA SCH OF PUBLIC HLTH
MILESTONES...: 08/79 -COMPLETE WORK ON CYCLOHEXENE, NOX, SULFUR DIOXIDE SYSTEM
PLAN ID.....: (AP-603A)(DU-A125) ATMOSPHERIC PROCESSES AND EFFECTS
MANDATE.....: 10-02 CLEAN AIR ACT
ORDIS CODES..: RECN-001801 SSIE-GMA 4903 EPA -R806070-01 TASK-G603A-AC-15
ORD -RG10830-1078 MAND-10-02 AP -603A
DU -A125 LABT-ALM

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: AN OUTDOOR CHAMBER WILL BE USED TO INVESTIGATE AEROSOL FORMATION PROCESSES IN SIMULATED URBAN ENVIRONMENTS. EXPERIMENTAL SYSTEMS WILL BE STUDIED TO ELUCIDATE THE INTERACTION OF SULFUR DIOXIDE WITH HYDROCARBON-OXIDES OF NITROGEN SYSTEMS THAT FORM LIGHT SCATTERING AEROSOLS. THE EXPERIMENTAL APPROACH WILL BE (1) TO ESTABLISH THE INITIAL HYDROCARBON (HC) CONCENTRATION AND THE HC/NOX RATIO FOR THE SUBSEQUENT SULFUR DIOXIDE EXPERIMENTS AND CHARACTERIZE THE ORGANIC AEROSOL, (2) GENERATE AND CHARACTERIZE THE AEROSOL FOR THE HC-NOX-SULFUR DIOXIDE SYSTEM FOR CONDITIONS FAVORABLE TO HOMOGENEOUS PATHWAYS, AND (3) FOR CONDITIONS FAVORABLE TO HETEROGENEOUS PATHWAYS.

**PROJECT: 03842-MARINE ECOSYSTEMS RESEARCH LABORATORY (MERL)

STARTING/ COMPLETION DATE : 07/78 - 06/80 : FUNDING : ESTIMATED - FY78 / $ 948200
TASK CODE=P625A-07 **EPA=R806072 ** (GRANT) PRIOR FY77 / $ 980000

EPA OFFICER,: B SCHNEIDER EPA/ERL - NARR
INVESTIGATOR,: ME PILSON UNIV OF RHODE ISLAND SCH OF OCEANOGRAPHY
JA KNAUSS UNIV OF RHODE ISLAND SCH OF OCEANOGRAPHY
S NIXON UNIV OF RHODE ISLAND SCH OF OCEANOGRAPHY
I SMAYDA UNIV OF RHODE ISLAND SCH OF OCEANOGRAPHY
MILESTONES,..: 07/80 -FINAL PROJECT REPORT
PLAN ID.....: (AP-625A)(DU-N140) EFFECTS OF ENERGY-RELATED POLL. ON ORGANISMS & ECOSYSTEMS
MANDATE.....: 20-62 DAA FOR ENERGY ,MINERALS, AND INDUSTRY
ORDIS CODES..: RECN-003842 SSIE-ZZ 242 EPA -R806072 TASK-P625A-07
ORD -RP10C30-2078 MAND-20-62 AP -625A
DU -N140 LABT-MEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVES: THE PRIMARY OBJECTIVES OF MERL ARE: A) TO DESIGN, DEVELOP AND OPERATE EXPERIMENTAL MARINE ECOSYSTEMS, B) TO INVESTIGATE THE BEHAVIOR OF THESE SYSTEMS AND THE ORGANISMS WHICH LIVE IN THEM, AND FROM THESE STUDIES TO EXAMINE THE FEASIBILITY OF USING LARGE MICROCOSMS TO IMPROVE OUR UNDERSTANDING OF THE BEHAVIOUR OF NATURAL SYSTEMS, C) TO STUDY THE EFFECTS OF VARIOUS PERTURBANTS ON INDIVIDUAL SPECIES, SPECIES-SPECIES INTERACTIONS, AND ON PROPERTIES OF THE WHOLE SYSTEM, D) TO INVESTIGATE THE GEOCHEMICAL AND BIOGEOCHEMICAL BEHAVIOUR OF VARIOUS ELEMENTS AND ORGANIC COMPOUNDS IN THESE COMPLEX ENCLOSED ECOSYSTEMS. APPROACH: MARINE MICROCOSMS ARE MAINTAINED IN TANKS OUTDOORS UNDER NATURAL SUNLIGHT. EACH TANK IS 5 1/2 M HIGH, 2 M IN DIAMETER AND CONTAINS 13 M3 OF WATER. IN THE BOTTOM IS PLACED ABOUT ONE TON OF SEDIMENT IN A LAYER 30 CM DEEP. AN ATTEMPT IS MADE TO COLLECT THE SEDIMENT SO AS TO MINIMIZE DAMAGE TO THE BENTHIC FAUNA. THE TANKS ARE FILLED WITH WATER FROM NARRAGANSETT BAY, AND THIS WATER ALSO FLOWS THROUGH THE TANK TO PRODUCE A RESIDENCE TIME OF ABOUT 30 DAYS. CURRENT PLANS: BIOLOGICAL AND CHEMICAL OBSERVATIONS WILL BE MADE ON PLANKTONIC AND BENTHONIC COMPONENTS OF THE ECOSYSTEMS, TO COMPARE WITH EACH OTHER AND WITH NARRAGANSETT BAY. CONTROL TANKS ARE UNTREATED; OTHER TANKS WILL HAVE CHRONIC INPUTS OF NO. 2 FUEL OIL OR RADIOACTIVE TRACERS.

**PROJECT: 00779-MOBILE MODEL OF REVERSE OSMOSIS, ACTIVATED ALUMINA ADSORPTION & ION EXCHANGE FOR TREATMENT OF COMMUNITY WATER SUPPLIES (ABBREV)
STARTING/ COMPLETION DATE : 07/78 - 07/80 : FUNDING : ESTIMATED - FY78 / $ 179174
TASK CODE=C614A-0052 **EPA=R806073-01 ** (GRANT) PRIOR FY /

EPA OFFICER,: TJ SORG EPA/MERL - CINC
INVESTIGATOR,: D CLIFFORD UNIV OF HOUSTON SCH OF ENG/CIV ENG DEPT
MILESTONES...: 01/79 -CONSTRUCT PILOT PLANT
01/80 -COMPLETE PILOT PLANT STUDIES
07/80 -COMPLETE FINAL REPORT
PLAN ID.....: (AP=614A)(OU=C110) WATER SUPPLY - WATER TREATMENT & SYSTEMS 0016
MANDATE.....: 10-99 AR
ORDIS CODES..: RECN=000779 SSIE-ZZ 391 EPA -R806073-01 TASK=C614A-0052
ORD -RC10C30-1078 MAND=10-99 AP -614A
OU -C110 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: IT IS ESTIMATED THAT THERE ARE WELL OVER ONE THOUSAND PUBLIC WATER SUPPLIES IN SMALL COMMUNITIES IN THE U.S. WHICH CONTAIN FLUORIDE, ARSENIC, SELENIUM OR NITRATE IN CONCENTRATIONS IN EXCESS OF THE MAXIMUM LIMITS (MCL'S) ESTABLISHED IN THE NATIONAL INTERIM PRIMARY DRINKING WATER REGULATIONS. PREVIOUS EXPERIENCE AND RESEARCH HAVE SHOWN THAT THESE ANIONIC CONTAMINANTS CAN BE REMOVED BY ADVANCED WATER TREATMENT PROCESSES SUCH AS PACKED BEDS OF ACTIVATED ALUMINA OR ION-EXCHANGE RESINS OR BY REVERSE OSMOSIS SEPARATION. RELIABLE DESIGN CRITERIA AND ECONOMICAL OPERATING PROCEDURES ARE NOT NOW AVAILABLE FOR THE SELECTION, COST-EFFECTIVE APPLICATION AND SAFE OPERATION OF THESE LITTLE-UNDERSTOOD PROCESSES FOR SMALL COMMUNITY WATER TREATMENT. IT IS PROPOSED TO EVALUATE THESE TECHNOLOGIES BY OPERATING A MOBILE PILOT PLANT ON AT LEAST FIVE SMALL COMMUNITY WATER SUPPLIES IN THE SOUTHWEST. THE PRIMARY OBJECTIVE IS TO OBTAIN RELIABLE DESIGN CRITERIA, COST INFORMATION AND OPERATING PROCEDURES FOR THESE PROCESSES FOR SMALL COMMUNITIES.

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**PROJECT: 00802-STABILITY AND EFFECTIVENESS OF CHLORINE, CHLORAMINE AND CHLORINE DIOXIDE IN A WATER DISTRIBUTION SYSTEM
STARTING/ COMPLETION DATE : 09/78 - 09/80 : FUNDING : ESTIMATED - FY78 / $ 126912
TASK CODE=C614A-092 **EPA=R806074-01 ** (GRANT) PRIOR FY /

EPA OFFICER,: MJ ALLEN EPA/MERL - CINC
INVESTIGATOR,: VP OLIVIERI JOHNS HOPKINS UNIV
K KAMATA JOHNS HOPKINS UNIV
CW KRUSE JOHNS HOPKINS UNIV
MILESTONES...: 01/81 -FINAL REPORT PUBLISHED
PLAN ID.....: (AP=614A)(OU=C110) WATER SUPPLY - WATER TREATMENT & SYSTEMS
MANDATE.....: 10-13 SOLID WASTE DISPOSAL ACT
ORDIS CODES..: RECN=000802 SSIE-GMA 5100 EPA -R806074-01 TASK=C614A-092
ORD -RC10B30-1078 MAND=10-13 AP -614A
OU -C110 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: SPECIFIC OBJECTIVES OF THE INVESTIGATION ARE TO EVALUATE THE PERFORMANCE OF FREE CHLORINE, CHLORAMINE, AND CHLORINE DIOXIDE RESIDUALS IN A FULL SCALE SECTION OF AN EXISTING WATER DISTRIBUTION SYSTEM WHEN CHALLENGED WITH A SEWAGE CONTAMINANT SIMULATING A CROSS CONNECTION OR BACK SIPHONAGE. THE FATE OF MICROORGANISMS OF HEALTH SIGNIFICANCE AND THE CHEMICAL AND BACTERIAL QUALITIES OF THE WATER UNDER CONDITIONS ENCOUNTERED OR EXPECTED IN A WATER DISTRIBUTION SYSTEM WITH DISINFECTANT RESIDUAL WILL BE EVALUATED.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
* OFFICE OF RESEARCH AND DEVELOPMENT *
LIST OF PROJECTS FROM MATCHED GRANT SYSTEM INPUT
* O R O I S D A T A E X T R A C T *

**PROJECT: 03213-ENERGY MODEL AND ANALYSIS OF A CADMIUM STREAM WITH A STUDY CORRELATING
ENBODIED ENERGY AND TOXICITY EFFECT
STARTING/ COMPLETION DATE : 08/78 - 08/80 : FUNDING : ESTIMATED - FY78 / $ 22600
TASK CODE=K7608-303 **EPA=R806080-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: LA BURNS
INVESTIGATOR.: HT ODUM
MILESTONES...: 08/80 -ECOSYSTEM MODEL OF FATE & EFFECTS OF CADMIUM IN STREAMS
PLAN ID.....: (AP=7608)(OU=L135) EXPOSURE FOR SOIL & WATER ROUTES
MANDATE.....: 10-03 TOXIC SUBSTANCES CONTROL ACT
30-99 EMS ECOLOGY

EPA/ERL - ATHENS
STATE UNIV OF FLORIDA SYS CTR FOR WETLANDS

ORDIS CODES..: RECN=003213 SSIE-ZZ 327 EPA -R806080-01 TASK-K7608-303
ORD -RK10C51-5078 MAND-10-03 MAND-30-99
AP -7608 OU -L135 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
COMMENT.....: K7608 - $11300, K7758 - $11300
ABSTRACT.....: THIS IS A PROPOSAL TO USE CONCEPTS OF ENERGY MODELS TO EVALUATE THE ROLE OF TOXIC POLLUTANTS IN AQUATIC ECOSYSTEMS. USING THE CADMIUM STREAM STUDIES DONE AT THE SAVANNAH RIVER PLANT AS A SPECIFIC EXAMPLE, THE ROLE OF THE POLLUTANT WILL BE SIMULATED INCLUDING ITS FATE AND ITS EFFECT, DIRECTLY ON COMPONENTS AND INDIRECTLY THROUGH CHANGES IN UPPER FOOD CHAINS. ENERGY ANALYSIS WILL BE PERFORMED ON THE MODEL DETERMINING THE ENERGY EMBODIED IN PATHWAYS, IN THE TOXIC SUBSTANCE AND IN THE EFFECTS, USING DATA FROM STUDIES, A TEST WILL BE MADE OF THE HYPOTHESIS THAT ENERGY EFFECT IN ADAPTED SYSTEMS IS PROPORTIONAL TO THE ENERGY EMBODIED IN A POLLUTANT. ALSO SOME CALCULATIONS WILL BE MADE ON SILVER SPRINGS BECAUSE OF THE DATA BASE AS A NATURAL SYSTEM CONTROL. THE POSSIBLE CORRELATION OF SENSITIVITY OF AN ECOSYSTEM'S COMPONENT TO ITS EMBODIED ENERGY WILL BE CORRELATED.

**PROJECT: 00579-EVALUATION OF DEEP SHAFT BIOLOGICAL WASTEWATER TREATMENT PROCESS

STARTING/ COMPLETION DATE : 08/78 - 02/81 : FUNDING : ESTIMATED - FY78 / $ 350000
TASK CODE=C6118-0042 **EPA=S806081 ** (GRANT) PRIOR FY /

EPA OFFICER,:	RC BRENNER	EPA/MERL - CINC	
INVESTIGATOR,:	DE SCHWINN	ITHACA WATER/SEWER DIV	DEPT OF PUBLIC WORKS
	J BLACK	ITHACA WATER/SEWER DIV	DEPT OF PUBLIC WORKS
	R COOPER	ITHACA WATER/SEWER DIV	DEPT OF PUBLIC WORKS
	WO DINGMAN	ITHACA WATER/SEWER DIV	DEPT OF PUBLIC WORKS
	OF STORRIER	ITHACA WATER/SEWER DIV	DEPT OF PUBLIC WORKS
MILESTONES...:	02/79 -CONSTRUCTION COMPLETED		
	08/80 -FIELD WORK COMPLETED		
PLAN ID.....:	(AP-6118)(OU-B106) WASTEWATER TREATMENT TECHNOLOGY PROGRAMS		
MANDATE.....:	10-01 FEDERAL WATER POLLUTION CONTROL ACT		
ORDIS CODES..:	RECN-000579	SSIE-ZZ 393	EPA -S806081 TASK-C6118-0042
	ORD -RC10C30-1078	MAND-10-01	AP -6118
	OU -B106	LABT-ALW	
PROJ STATUS..:	PROJECT-ACTIVE	DATA-ORIGINAL	CATEGORY-RESEARCH

ABSTRACT.....: THE OBJECTIVES OF THIS PROJECT ARE TO EVALUATE THE EFFICIENCY OF THE DEEP SHAFT PROCESS IN TREATING MUNICIPAL WASTEWATER UNDER VARIOUS CONDITIONS AND COMPARE IT TO OTHER ACTIVATED SLUDGE SYSTEMS TO DEFINE CRITICAL DESIGN AND OPERATING PARAMETERS, TO COMPARE SOLIDS SEPARATION CHARACTERISTICS UTILIZING FLOTATION SEDIMENTATION TANKS, AND TO PROVIDE CAPITAL AND OPERATING COST ESTIMATES TO APPLY DEEP SHAFT TECHNOLOGY. IT IS PROPOSED TO CONSTRUCT A DEEP SHAFT PILOT DEMONSTRATION SYSTEM AT THE CITY OF ITHACA SEWAGE TREATMENT PLANT SITE TO TREAT TYPICAL MUNICIPAL WASTEWATER. THE SYSTEM WILL BE CAPABLE OF OPERATION IN THE FLOTATION OR GRAVITY SEDIMENTATION MODE. PROCESS PERFORMANCE IN BOTH MODES WILL BE EVALUATED UNDER VARYING CONDITIONS INCLUDING DIURNAL FLOW, ORGANIC LOADING, TEMPERATURE, AND CHEMICAL ADDITION.

**PROJECT: 00377-ASSESSMENT OF POTENTIAL IMPACTS OF PROPOSED ENERGY DEVELOPMENT ON WATER
RESOURCES OF THE NORTHERN CHEYENNE INDIAN RESERVATION, MONTA
STARTING/ COMPLETION DATE : 07/78 - 07/80 : FUNDING : ESTIMATED - FY78 / $ 70000
TASK CODE=R6238-706 **EPA=R806082-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: JF MARTIN EPA/IERL - CINC
INVESTIGATOR.: RW HOESSNER NORTHERN CHEYENNE TRIBE
K MONTEAU NORTHERN CHEYENNE TRIBE
TJ OSBORNE NORTHERN CHEYENNE TRIBE
EL HEFFERN NORTHERN CHEYENNE TRIBE

MILESTONES...: 07/80 -FINAL REPORT ON NORTHERN CHEYENNE ENERGY IMPACT ASSESSMENT
PLAN ID.....: (AP-6238)(DU-N105) ENERGY RESOURCE EXTRACTION AND HANDLING, SOLID FOSSIL FUELS
MANDATE.....: 10-99 -NUCLEAR ENERGY) PL 93-577 0008
ORDIS CODES..: RECN-000377 SSIE-ZZ 622 EPA -R806082-01 TASK-R6238-706
ORD -R810C30-1078 MAND-10-99 AP -6238
DU -N105 LAST-EMI

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE NORTHERN CHEYENNE TRIBE OWNS 23 BILLION TONS OF LOW SULFUR COAL. IT HAS EXPRESSED A DESIRE TO UNDERSTAND THE IMPLICATIONS OF DEVELOPING ALL, PART OR NONE OF ITS COAL RESOURCE. IN 1973, THE NORTHERN CHEYENNE RESEARCH PROJECT (NCRP) WAS FORMED BY THE TRIBE TO PROVIDE IT WITH THE NEEDED TECHNICAL INFORMATION AND ANALYSIS REQUIRED TO MAKE AN INFORMED DECISION ON THE FUTURE USE OF ITS COAL RESOURCE. SUPPORTED BY EPA FUNDING IN 1975, THE NCRP BEGAN CONDUCTING ORIGINAL HYDROLOGIC RESEARCH IN AN ATTEMPT TO EVALUATE THE NATURAL HYDROLOGIC SYSTEMS OF THE RESERVATION AND ASSESS IMPACTS THAT POTENTIAL ENERGY DEVELOPMENT ON AND NEAR THE RESERVATION COULD HAVE ON THE TRIBE'S WATER RESOURCES. INITIAL RESEARCH DISCOVERED A COMPLEX HYDROLOGIC SYSTEM AND RAISED ADDITIONAL QUESTIONS WHICH NEED TO BE EVALUATED BEFORE ACCURATE IMPACT ASSESSMENT AND MANAGEMENT PLANNING CAN BE ACCOMPLISHED. IN SUBMITTING THIS PROPOSAL, THE NORTHERN CHEYENNE TRIBE HAS THE FOLLOWING GENERAL GOALS: 1) TO CONTINUE HYDROLOGIC AND GEOLOGIC FIELD PROGRAMS TO FURTHER IDENTIFY THE NATURAL SYSTEMS AND MONITOR NATURAL AND ENERGY DEVELOPMENT INDUCED CHANGE IN THE HYDROLOGIC SYSTEM, 2) TO DETERMINE THE IMPACTS THAT PROPOSED ENERGY DEVELOPMENT ON AND NEAR THE NORTHERN CHEYENNE INDIAN RESERVATION WILL HAVE ON THE SURFACE WATER AND GROUND WATER RESOURCES OF THE TRIBE, 3) TO DESIGN A COMPREHENSIVE WATER RESOURCE MANAGEMENT PLAN FOR THE TRIBE WHICH WILL MINIMIZE ENERGY RELATED IMPACTS. THIS PROPOSAL IDENTIFIES THREE SPECIFIC PROJECTS WHICH ARE NECESSARY TO MAKE PROGRESS TOWARDS ACCOMPLISHING THE STATED GOALS. THE EXISTING MONITORING PROGRAM WILL BE CONTINUED TO PROVIDE NEEDED HISTORICAL RECORDS TO IDENTIFY NATURAL VARIATIONS AND CALIBRATE NEEDED HYDROLOGIC MODELS. A STUDY OF A TRIBAL DOMESTIC COAL MINE SITE TO EVALUATE PREMINING, DURING MINING AND POST MINING HYDROLOGIC CONDITIONS WILL BE UNDERTAKEN AND RELATED TO EXISTING REGIONAL DATA. THE THIRD PROJECT WILL DESIGN AND IMPLEMENT A DATA PROCESSING SYSTEM WHICH WILL UTILIZE THE LARGE VOLUME OF HYDROLOGIC DATA COLLECTED DURING THIS PROJECT AND THE PRECEDING ONE TO EVALUATE ENERGY IMPACTS TO THE HYDROLOGIC SYSTEM AND ASSIS

**PROJECT: 03764-THE ENVIRONMENTAL IMPACT OF ENERGY-RELATED ORGANIC COMPOUNDS ON AQUATIC ORGANISMS
STARTING/ COMPLETION DATE : 07/78 - 06/79 : FUNDING : ESTIMATED - FY78 / $ 83800
TASK CODE=N625A-086 **EPA=R806083-01 ** (GRANT) PRIOR FY /
EPA OFFICER.: JI TEASLEY EPA/ERL - DULUTH
INVESTIGATOR.: RM CARLSON UNIV OF MINNESOTA
MILESTONES...: 06/79 -FINAL REPORT
PLAN ID.....: (AP-625A)(DU-N140) EFFECTS OF ENERGY-RELATED POLL. ON ORGANISMS & ECOSYSTEMS
MANDATE.....: 30-99 ISTRY-BIOLOGY 0047
ORDIS CODES..: RECN-003764 SSIE-ZZ 255 EPA -R806083-01 TASK-N625A-086
ORD -RN10C10-3078 MAND-30-99 AP -625A
DU -N140 LAB-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE PROPOSED WORK WILL ATTEMPT TO ASSESS THE POTENTIAL HAZARD TO AQUATIC ORGANISMS OF EXPOSURE TO SEDIMENT, SUSPENDED MICROPARTICULATES, AND WATER KNOWN TO CONTAIN ENERGY RELATED ORGANIC COMPOUNDS. THE PROGRAM WILL BE APPROACHED IN THE FOLLOWING WAYS: 1) THE ORGANIC CONTENT OF EXTRACTS OF TISSUE, MICROPARTICULATES (E.G., FLY ASH, SEDIMENT, ETC.) AND WATER FROM AREAS IMPACTED BY ENERGY PRODUCTION FACILITIES THAT USE COAL AS THEIR FUEL SOURCE WILL BE COMPARED WITH SIMILAR EXTRACTS FROM AREAS NOT SUBJECT TO SUCH STRESS. 2) BIOLOGICAL SYSTEMS (I.E., FISH, INVERTEBRATES, BACTERIA) WILL BE EVALUATED TO DETERMINE IF THERE ARE ADVERSE EFFECTS SUCH AS TOXICITY, BIOACCUMULATION, OR MUTATION UPON EXPOSURE TO PAH'S POLYCYCLIC AROMATIC PHENOLS, AND AZARENES. 3) THE CHEMICAL AND BIOLOGICAL PROPERTIES OF PHOTO OXIDATION AND CHLORINATION PRODUCTS OF ENERGY-RELATED ORGANIC COMPOUNDS WILL BE INVESTIGATED. 4) THE EFFECT OF ADSORPTION OF THE ORGANIC COMPOUND ON PARTICULATES IN MEDIATING BIOLOGICAL RESPONSE AND CHEMICAL REACTIVITY WILL ALSO BE STUDIED.

**PROJECT: 03522-EFFECTS OF SEDIMENT-TROPHIC INTERACTIONS ON STREAM COMMUNITIES
STARTING/ COMPLETION DATE : 08/78 - 07/80 : FUNDING : ESTIMATED - FY78 / $ 26735
TASK CODE=M608A-224 **EPA=R806087-01 ** (GRANT) PRIOR FY /
EPA OFFICER.: S DOMINIGUEZ EPA/ERL - CORVALLIS
INVESTIGATOR.: NH ANDERSON OREGON STATE UNIV SCH OF AGRIC/ENTOMOLOGY DEPT
MILESTONES...: 07/80 -FINAL REPORT
PLAN ID.....: (AP-608A)(DU-8115) FRESHWATER ECOLOGICAL PROCESSESS & EFFECTS
FINAL OUTPUT.: REPORT TO INCREASE UNDERSTANDING OF SEDIMENTATION E 0042
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-003522 SSIE-GMA 5035 EPA -R806087-01 TASK-M608A-224
ORD -RM10B30-1078 MAND-10-01 AP -608A
DU -8115 LAB-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVE: TO DETERMINE HOW SEDIMENT IMPACTS IN HABITAT AND TROPHIC PROCESSES INFLUENCE STREAM INVERTEBRATES AND TO EVALUATE THREE METHODS OF INVERTEBRATE COMMUNITY ANALYSIS (DIVERSITY, FUNCTIONAL GROUPING, AND SPECIES TOLERANCE INDEX) AS WAYS OF DETECTING CHANGE AND AS SOURCES OF INFORMATION ON STREAM HEALTH IN GENERAL. FINAL OUTPUT: REPORT WHICH WILL INCREASE OUR UNDERSTANDING OF SEDIMENTATION EFFECTS ON FISH. IT IS ALSO DESIGNED TO PROVIDE MEANINGFUL METHOD FOR DETECTING AND INTERPRETING INVERTEBRATE COMMUNITY CHANGE BROUGHT ABOUT BY RMP'S IN THE MODEL IMPLEMENTATION PROGRAMS.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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LIST OF PROJECTS FROM MATCHED GRANT SYSTEM INPUT
* O R D I S D A T A E X T R A C T *

**PROJECT: 03443-SYMPOSIUM - MANAGEMENT AND UTILIZATION OF ANIMAL WASTES

STARTING/ COMPLETION DATE : 07/78 - 06/79 : FUNDING : ESTIMATED - FY78 / $ 1000
TASK CODE=L770D-3-36 **EPA=R806089-01 ** (GRANT) PRIOR FY /

EPA OFFICER..: LR SHUYLER EPA/ERL - ADA
INVESTIGATOR..: AL SUTTON AMERICAN SOC OF ANIMAL SCI
C CRUSE AMERICAN SOC OF ANIMAL SCI
MILESTONES...: 06/79 -FINAL REPORT SUBMITTED
PLAN ID.....: (AP=770D)(DU=R133) ANIMAL PRODUCTION
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN=003443 SSIE-GMA 5285 EPA =R806089-01 TASK=L770D-3-36
ORD =RL10B30-1078 MAND=10-01 AP =770D
DU =R133 LABT=ALW

PROJ STATUS..: PROJECT=ACTIVE DATA=ORIGINAL CATEGORY=RESEARCH
ABSTRACT.....: THE OBJECTIVE OF THIS SYMPOSIUM IS TO DISCUSS ADVANCEMENTS IN THE STATE OF THE ART IN CERTAIN AREAS OF THE MANAGEMENT AND UTILIZATION OF ANIMAL WASTES WITH POLLUTION ABATEMENT. SCIENTISTS ATTENDING THIS SYMPOSIUM WILL BE EXPOSED TO RESEARCH INFORMATION, CRITICAL EVALUATIONS AND PRACTICAL EXPERIENCES RELATED TO WASTE PROCESSING AND REFEEDING, REGULATORY CONCERNS, METHANE DIGESTERS AND OTHER NUTRIENT RECOVERY SYSTEMS, NEW WASTE HANDLING TECHNIQUES AND ECONOMIC COMPARISONS OF WASTE MANAGEMENT SYSTEMS.THIS SYMPOSIUM IS DESIGNED TO CRITICALLY EVALUATE AND SHARE EXPERIENCES ON THESE TOPICS BY RESEARCHERS, BUSINESSMEN AND REGULATORY OFFICIALS INVOLVED IN THESE AREAS. THE ULTIMATE BENEFIT OF THIS SYMPOSIUM IS THAT FROM THE INFORMATION PRESENTED, SCIENTISTS, ENVIRONMENTALISTS, REGULATORY AGENCIES, LIVESTOCK PRODUCERS, AND THE GENERAL PUBLIC WILL KNOW (1) WHAT MANAGEMENT SYSTEMS APPEAR USEFUL IN EFFICIENTLY UTILIZING NUTRIENTS IN WASTE WHILE CONTROLLING POLLUTION AND (2) WHAT PROBLEMS EXIST WITH CURRENT MANAGEMENT SYSTEMS AND FUTURE RESEARCH INFORMATION NEEDS. A ONE-HALF DAY SYMPOSIUM WILL BE HELD DURING A JOINT ANNUAL MEETING OF THE AMERICAN SOCIETY OF ANIMAL SCIENCE AND AMERICAN DAIRY SCIENCE ASSOCIATION, EAST LANSING, MICHIGAN, JULY 9-13, 1978. MANUSCRIPTS OF THE SYMPOSIUM WILL BE PUBLISHED IN THE JOURNAL OF ANIMAL SCIENCE. PROJECT HAS BEEN FUNDED AS OF JULY 1978.

**PROJECT: 00428-FIELD TEST KIT FOR CHARACTERIZING OIL-BRINE EFFLUENTS

STARTING/ COMPLETION DATE : 07/78 - 11/79 : FUNDING : ESTIMATED - FY78 / $ 66000
TASK CODE=H623C-686 **EPA=R806091-01 ** (GRANT) PRIOR FY /

EPA OFFICER..: JS FARLOW EPA/IERL - CINC
INVESTIGATOR..: JH SMITH S R I INTERNATL
MILESTONES...: 11/79 -FINAL REPORT RECEIVED
PLAN ID.....: (AP=623C)(DU=N105) ENERGY RESOURCE EXTRACTION AND HANDLING, OIL & GAS PROD.
MANDATE.....: 20-62 DAA FOR ENERGY ,MINERALS, AND INDUSTRY
ORDIS CODES..: RECN=000428 SSIE-GMA 5465 EPA =R806091-01 TASK=H623C-686
ORD =RB10H30-2078 MAND=20-62 AP =623C
DU =N105 LABT=EMI

PROJ STATUS..: PROJECT=ACTIVE DATA=ORIGINAL CATEGORY=RESEARCH
ABSTRACT.....: THE OBJECTIVE OF THIS PROJECT IS TO EVALUATE IN THE LABORATORY, AND SUBSEQUENTLY IN FIELD STATIONS, TEST METHODS FOR CHARACTERIZING OIL-BRINE EFFLUENTS FROM OFFSHORE EXPLORATION AND PRODUCTION PLATFORMS. A FIELD TEST KIT INCLUDING ALL EQUIPMENT, MATERIALS, SUPPLIES AND DETAILED OPERATING INSTRUCTIONS WILL BE PREPARED AND DELIVERED TO EPA.

**PROJECT: 03424-IRRIGATION RETURN FLOW SALINITY CONTROL IN THE MIDDLE RIO GRANDE OF NEW MEXICO - MONITORING, MODELING AND VARIABILITY
STARTING/ COMPLETION DATE : 10/78 - 09/81 : FUNDING : ESTIMATED - FY78 / $ 314398
TASK CODE=L770A-2-27 **EPA=R806092-01 ** (GRANT) PRIOR FY /

EPA OFFICER,: AG HURNSBY EPA/ERL - ADA
INVESTIGATOR,: LW GELHAR N.M. INST OF MINING & TECH DEPT OF GEOSCI
PJ WIERENGA NEW MEXICO INST MIN & TECH HYDROLOGY DEPT
AL GUTJAHR N.M. INST OF MINING & TECH DEPT OF GEOSCI
P HUYAKORN N.M. INST OF MINING & TECH DEPT OF GEOSCI
MILESTONES,..: 12/81 -FINAL PROJECT REPORT
PLAN ID.....: (AP-770A)(OU-B133) IRRIGATED CROP PRODUCTION
MANDATE.....: 20-11 DAA FOR WATER PLANNING AND STANDARDS
ORDIS CODES,.: RECN-003424 SSIE-ZZ 261 EPA -R806092-01 TASK-L770A-2-27
ORD -RL10C30-2078 MAND-20-11 AP -770A
OU -B133 LAB-ALN

PROJ STATUS,.: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVES OF THIS PROJECT: 1. TO EVALUATE THE EFFECTS OF IRRIGATION ON WATER QUALITY IN THE MIDDLE RIO GRANDE VALLEY OF NEW MEXICO THROUGH INTENSIVE MONITORING OF A FARMING OPERATION AT SAN ACACIA, NEW MEXICO. 2. TO EVALUATE THE PREDICTIVE CAPABILITIES OF THE BUREAU OF RECLAMATION HYDROSALINITY MODEL APPLIED TO THE SAN ACACIA SITE, AND TO CONSIDER MODIFICATIONS NECESSARY TO IMPROVE THIS MODEL. 3. TO EVALUATE THE EFFECTS OF SPATIAL AND TEMPORAL VARIABILITY OF FLOW AND WATER QUALITY INPUTS AND PARAMETERS USING A STOCHASTIC MODEL WHICH INCORPORATES DATA ON THE VARIABILITY OF CHEMICAL AND FLOW PARAMETERS AT THE SAN ACACIA SITE. THE EXPERIMENT WILL BE CONDUCTED ON A 250 ACRE FARM AT SAN ACACIA, 16 MILES NORTH OF SOCORRO, N.M. THE IRRIGATION WATER ONTO, AND THE DRAINAGE WATER FROM THE FARM WILL BE MEASURED WITH RESPECT TO QUANTITY AND QUALITY. A DETAILED NET OF PIEZOMETERS WILL BE INSTALLED TO MEASURE FLUCTUATIONS IN THE LEVEL AND QUALITY OF THE GROUNDWATER. A STOCHASTIC APPROACH WILL BE USED TO DESCRIBED TEMPORAL AND SPATIAL VARIABILITY OF A NUMBER OF PHYSICAL AND CHEMICAL PARAMETERS AT THE SITE. STOCHASTIC SOLUTIONS OF A LUMPED PARAMETER MODEL WITH TIME VARIABLE DEEP PERCOLATION AND CONCENTRATION INPUT WILL ALSO BE DEVELO

**PROJECT: 01813-REACTIONS OF OXY RADICALS IN THE ATMOSPHERE

STARTING/ COMPLETION DATE : 06/75 - 06/81 : FUNDING : ESTIMATED - FY78 / $ 59938
TASK CODE=G603A-AC-29 **EPA=R806093-01 ** (GRANT) PRIOR FY77 / $ 245025

EPA OFFICER,: MC DODGE EPA/ESRL - RTP
INVESTIGATOR,: DG HENDRY S R I INTERNATL
RA KENLEY S R I INTERNATL
JE DAVENPORT S R I INTERNATL
MILESTONES,..: 12/78 -INTERIM REPORT
12/81 -ORD FINAL REPORT
PLAN ID,.....: (AP=603A)(DU=A125) ATMOSPHERIC PROCESSES AND EFFECTS
FINAL OUTPUT,: RATE CONSTANTS AND PRODUCTS FOR REACTION OF OH WITH 0034
BENZALDEHYDE AND CRESOLS, CRESOL WITH O3 AND OLEFIN 0034
WITH HO2. 0034
MANDATE.....: 10-02 CLEAN AIR ACT
CURR. RESULTS: DETERMINATION OF PRIMARY PRODUCTS FORMED IN TOLUENE 0034
ORDIS CODES..: RECN-001813 SSIE-GMA 5171 EPA -R806093-01 TASK-G603A-AC-29
ORD -RG10830-1078 LABN-G603A-AC-21 MAND-10-02
AP -603A DU -A125 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
COMMENT.....: IN FY 77 PROJECT FUNDED BY G603A-AE-004 ($40000) A 0034
G603A-AC-011 ($5000) 0034
ABSTRACT.....: THE OBJECTIVE OF THIS STUDY IS TO DETERMINE THE RATES AND PRODUCTS OF REACTIONS THAT PLAY AN IMPORTANT ROLE IN THE FORMATION OF PHOTOCHEMICAL SMOG. THE OUTPUTS OF THIS STUDY WILL BE RATE CONSTANTS AND PRODUCTS FOR THE REACTION OF (1) OH WITH BENZALDEHYDE AND CRESOLS, (2) CRESOL WITH O3, AND (3) OLEFINS WITH HO2. IN ADDITION, THE PHOTOLYSIS OF BENZALDEHYDE IN THE PRESENCE AND ABSENCE OF O2 WILL BE INVESTIGATED. RESULTS OBTAINED TO DATE INCLUDE A DETERMINATION OF THE PRIMARY PRODUCTS FORMED IN THE TOLUENE-OH REACTION. IN ADDITION, RATE CONSTANTS FOR THE THERMAL DECOMPOSITION OF PAN AND THE RELATIVE RATES OF REACTION OF ACYLPEROXY RADICALS WITH NO AND NO2 WERE OBTAINED.

**PROJECT: 01290-APPLICATION OF MULTIPLE WAVELENGTH SPECTROSCOPY TO METABOLIC STUDIES

STARTING/ COMPLETION DATE : 10/78 - 09/79 : FUNDING : ESTIMATED - FY78 / $ 39893
TASK CODE=D629A-004 **EPA=R806094-01 ** (GRANT) PRIOR FY /

EPA OFFICER,: S LUTKENHOFF EPA/HERL - CINC
INVESTIGATOR,: KR OKEEFE COLORADO STATE UNIV CHEM/ELEC ENG DEPTS
TA BRUBAKER COLORADO STATE UNIV CHEM/ELEC ENG DEPTS
MILESTONES...: 12/79 -PROJECT FINALIZATION AND SUBMISSION OF DETAILED SPECIFICATIONS
PLAN ID.....: (AP=629A)(DU=L105) MULTI-ROUTE EXPOSURE: ADVERSE EFFECTS, TOXIC SUBSTANCES
0021
MANDATE.....: 30-99 HEMISTRY
ORDIS CODES..: RECN-001290 SSIE-ZZ 417 EPA -R806094-01 TASK-D629A-004
ORD -RD10C30-3078 MAND-30-99 AP -629A
DU -L105 LABT-MEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THIS PROPOSAL REQUESTS FUNDS FOR THE DEVELOPMENT OF MULTIPLE WAVELENGTH DETECTION TECHNIQUES FOR APPLICATION TO ATOMIC AND MOLECULAR SPECTROSCOPY. SPECIFICALLY, IT IS PROPOSED THAT A MULTIWAVELENGTH DETECTION SYSTEM BE DEVELOPED AND CHARACTERIZED AND THAT THIS SYSTEM BE EVALUATED WITH RESPECT TO ITS UTILITY FOR THE SIMULTANEOUS DETERMINATION OF SEVERAL CONSENT-DECREE METALS IN NATURAL WATERS BY ATOMIC ABSORPTION SPECTROMETRY AND FOR THE STUDY OF METABOLISM IN TISSUE SLICES BY MOLECULAR ABSORPTION SPECTROMETRY.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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LIST OF PROJECTS FROM MATCHED GRANT SYSTEM INPUT
* O R D I S D A T A E X T R A C T *

**PROJECT: 02123-INSTRUMENTATION DEVELOPMENT FOR AMBIENT REDUCED FORMS OF SULFUR IN AIR

STARTING/ COMPLETION DATE : 07/78 - 00/82 : FUNDING : ESTIMATED - FY78 / $ 15000
TASK CODE=G7128-88-60 **EPA=R806099-01 ** (GRANT) PRIOR FY /

EPA OFFICER,: WA MCCLENNY EPA/ESHL - RTP
INVESTIGATOR,: RS BRAMAN STATE UNIV SYS OF FLORIDA UNIV SOUTH FLORIDA
B PAVONE STATE UNIV SYS OF FLORIDA UNIV SOUTH FLORIDA
JM AMMONS STATE UNIV SYS OF FLORIDA UNIV SOUTH FLORIDA
MILESTONES...: 01/79 -REPORT ON DETECTION TECHNIQUES FOR ORGANIC-SULFUR COMPOUNDS
01/82 -REPORT ON DETECTION TECHNIQUES FOR BIOGENIC COMPOUNDS
01/82 -METHODS COMPLETED FOR BIOGENIC N AND S CONTAINING COMPOUNDS
PLAN ID.....: (AP-7128)(OU-A130) CHAR. AND MEASUREMENT METHODS DEVELOPMENT (AIR)
FINAL OUTPUT,: EPA-ORD REPORT ON METHODOLOGY AND USE OF MONITORING 0042
FOR SULFUR AND NITROGEN-CONTAINING COMPOUNDS. 0042
MANDATE.....: 10-02 CLEAN AIR ACT
ORDIS CODES..: RECN-002123 SSIE-ZZ 164 EPA -R806099-01 TASK-G7128-88-60
ORD -RG10C30-1078 MAND-10-02 AP -7128
OU -A130 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVE/APPROACH: THE OBJECTIVE OF THE PROPOSED WORK IS TO DEVELOP A MONITORING SYSTEM FOR DETECTION OF: (1) AMBIENT LEVEL S-CONTAINING COMPOUNDS OF BIOGENIC ORIGIN, SUCH AS HYDROGEN SULFIDE, DIMETHYL SULFIDE AND METHYLMERCAPTAN AND (2) AMBIENT LEVEL N-CONTAINING COMPOUNDS OF BIOGENIC ORIGIN, SUCH AS NH3, CH3NH2 AND N2O. THE APPROACH IS TO PRECONCENTRATE THE COMPOUNDS OF INTEREST BY ABSORPTION ON A SUITABLE SURFACE AND THEN TO THERMALLY RELEASE THE ABSORBED COMPOUNDS INTO A SUITABLE DETECTOR. FINAL OUTPUTS: THE FINAL OUTPUT WILL BE AN EPA-ORD REPORT ON THE METHODOLOGY AND USE OF THE MONITORING SYSTEM FOR SULFUR AND NITROGEN-CONTAINING COMPOUNDS OF BIOGENIC ORIGIN.

**PROJECT: 00584-PRESENCE OF PRIORITY POLLUTANTS IN SEWAGE AND THEIR REMOVAL IN SEWAGE TREATMENT PLANTS
STARTING/ COMPLETION DATE : 06/78 - 06/80 : FUNDING : ESTIMATED - FY78 / $ 400000
TASK CODE=C6118-0048 **EPA=R806102-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: SA HANNAH EPA/MERL - CINC
INVESTIGATOR.: FB DEWALLE UNIV OF WASHINGTON SCH OF PUBLIC HLTH
ES CHIAN GEORGIA INST OF TECH CIV ENG DEPT
MILESTONES...: 02/79 -COMPLETE DEVELOPMENT OF ANALYTICAL PROTOCOL
05/80 -COMPLETE SURVEY OF 25 TREATMENT PLANTS FOR PRIORITY POLLUTANTS
PLAN ID.....: (AP=6118)(DU=B106) WASTEWATER TREATMENT TECHNOLOGY PROGRAMS
FINAL OUTPUT.: ANALYTICAL PROTOCOL FOR PRIORITY POLLUTANTS IN MUN. 0013
RESULTS OF SURVEY OF 25 TREATMENT PLANT FOR PRIOR. 0013
MANDATE.....: 10-03 TOXIC SUBSTANCES CONTROL ACT
CURR. RESULTS: PROCEDURES FOR VOLATILE PRIOR. POLL. IN SLUDGE BEIN 0013
ORDIS CODES..: RECN=000584 SSIE-ZZ 395 EPA =R806102-01 TASK=C6118-0048
ORD =RC10C30-1078 MAND=10-03 AP =6118
DU =B106 LABT=ALW

PROJ STATUS..: PROJECT=ACTIVE DATA=ORIGINAL CATEGORY=RESEARCH
ABSTRACT.....: OBJECTIVES/APPROACH: THE PROPOSED STUDY WILL CONDUCT A SURVEY TO DETECT THE PRESENCE OF PRIORITY POLLUTANTS IN RAW SEWAGE IN MAJOR METROPOLITAN AREAS DURING BOTH THE DRY AND WET SEASON. THE REMOVAL OF THESE POLLUTANTS BY SEDIMENTATION AND BIOLOGICAL DEGRADATION WILL BE ASSESSED BY MONITORING FOR TRACE POLLUTANTS IN PRIMARY AND SECONDARY SEWAGE EFFLUENT. SINCE MANY POLLUTANTS ACCUMULATE IN THE BACTERIAL BIOMASS, ANAEROBIC DIGESTER SLUDGE WILL ALSO BE TESTED FOR PRIORITY POLLUTANTS. EACH SAMPLE WILL BE ANALYZED FOR VOLATILE CHLORINATED HYDROCARBONS USING A PURGING TECHNIQUE. CHLORO- AND NITROBENZENES, BIPHENYLS, ETHERS, NITROSAMINES AND PHTHALATES WILL BE OBTAINED IN THE NEUTRAL/BASE METHYLENE CHLORIDE EXTRACT, WHILE CHLORINATED PHENOLS WILL BE RECOVERED IN THE ACID METHYLENE CHLORIDE EXTRACT. POLYNUCLEAR AROMATIC HYDROCARBONS WILL BE EXTRACTED FROM THE WATER WITH CYCLOHEXANE WHILE PESTICIDES WILL BE RECOVERED WITH HEXANE. ANY PRIORITY POLLUTANT PRESENT ABOVE 1 PPB (1 MICRON G/1) WILL BE ANALYZED AND QUANTIFIED. OUTPUTS: 1. AN ANALYTICAL PROTOCOL FOR PRIORITY POLLUTANTS IN MUNICIPAL WASTEWATERS. 2. FINAL REPORT WITH RESULTS OF SURVEY OF 25 TREATMENT PLANTS FOR PRIORITY POLLUTANTS. RESULTS TO DATE: THE ANALYTICAL PROCEDURES FOR VOLATILE PRIORITY POLLUTANTS IN SLUDGE ARE BEING EVALUATED.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
* OFFICE OF RESEARCH AND DEVELOPMENT *
LIST OF PROJECTS FROM MATCHED GRANT SYSTEM INPUT
* O R D I S D A T A E X T R A C T *

**PROJECT: 00875-DEVELOPMENT OF DESIGN CRITERIA FOR DISPOSAL OF WASTE PESTICIDE SOLUTIONS
USING ROOFED AND UNROOFED EVAPORATION PITS
STARTING/ COMPLETION DATE : 09/78 - 10/80 : FUNDING : ESTIMATED - FY78 / $ 51960
TASK CODE=C618A-110 **EPA=R806103-01 ** (GRANT) PRIOR FY /

EPA OFFICER,: CJ ROGERS EPA/MERL - CINC
INVESTIGATOR,: DL REDDELL TEXAS A & M UNIV AGRIC EXP STA
MILESTONES...: 12/78 -COMPLETE MODEL DEVELOPMENT
06/79 -COMPLETE FIELD TEST OF RECOMMENDED MODEL
09/79 -COMPLETE EVALUATION OF TRANSPARENT ROOFING MATERIALS
12/79 -COMPLETE OPTIMIZATION OF FIELD SCALE DISPOSAL MODEL
01/80 -INITIATE FULL-SCALE DEMONSTRATION OF PESTICIDE DISPOSAL SYSTEM
06/80 -DEVELOP CRITERIA FOR DISPOSAL OF PESTICIDES FROM AERIAL APPLICATO RS
11/80 -COMPLETE GUIDELINES FOR GROUND AND AERIAL PESTICIDE DISPOSAL
PLAN ID.....: (AP-618A)(DU-0110) SOLID & HAZARDOUS WASTE MANAGEMENT
MANDATE.....: 10-99 ERIA DOCUMENT 0019
20-34 OAA FOR PESTICIDE PROGRAMS
20-14 OAA FOR SOLID WASTE
30-99 ICAL & AGRICULTURAL ENGINEERING 0019
ORDIS CODES..: RECN-000675 SSIE-ZZ 357 EPA -R806103-01 TASK-C618A-110
ORD -RC10C30-5078 MAND-10-99 MAND-20-34
MAND-20-14 MAND-30-99 AP -618A DU -0110
LABT-ALW
PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVES: DEVELOP A MODEL (OR MODELS) FOR DESIGNING ROOFED AND UNROOFED EVAPORATION PITS USED TO DISPOSE OF WASTE PESTICIDE SOLUTIONS, FIELD TEST THE RECOMMENDED DESIGN PROCEDURES FROM THE MODEL TO EVALATE HOW WELL THE MODEL WORKS UNDER ACTUAL OPERATING CONDITIONS, EVALUATE SEVERAL TRANSPARENT MATERIALS UNDER FIELD CONDITIONS FOR USE AS A ROOFING MATERIAL ABOVE EVAPORATIVE PITS, AND PREPARE GUIDELINES FOR DESIGNING ROOFED AND UNROOFED EVAPORATION PONDS TO DISPOSE OF WASTE PESTICIDES FROM AERIAL APPLICATORS ACROSS THE ENTIRE STATE OF TEXAS. THESE GUIDELINES WOULD ALSO BE USEFUL IN OTHER AREAS OF THE UNITED STATES. APPROACH: A STUDY WILL MADE TO SELECT TRANSPARENT ROOFING MATERIALS FOR USE IN EVAPORATION POND DESIGN. PHYSICAL MODEL STUDIES AT COLLEGE STATION, TEMPLE, AND LUBBOCK, TEXAS, WILL EVALUATE TRANSPARENT ROOFING MATERIALS UNDER FIELD CONDITIONS AND DEVELOP EVAPORATION RATE DATA FOR WASTE PESTICIDE SOLUTIONS. A PROTOTYPE STUDY WILL BE MADE AT BEAUMONT AND VERNON, TEXAS, TO TEST DESIGN PROCEDURES ON FULL-SIZED EVAPORATION PITS. A MATHEMATICAL MODEL DESCRIBING THE AREA AND VOLUME REQUIREMENTS OF EVAPORATION PONDS, BOTH ROOFED AND UNROOFED, WILL BE DEVELOPED AND TESTED. DATA COLLECTED FROM THE PROTOTYPE STUDY WILL BE COMPARED TO THE PREDICTIVE VALUES FROM THE MODEL. A DESIGN PROCEDURE FOR SELECTING THE PROPER AREA AND DEPTH OF EVAPORATION PONDS WILL BE DEVELOPED. FINAL GUIDELINES WILL BE DEVELOPED FOR DESIGNING AND OPERATING EVAPORATION PITS TO DISPOSE OF WASTE PESTICIDE SOLUTIONS.

**PROJECT: 00607-FACTORS AFFECTING ACTIVATED SLUDGE BULKING (UCB-ENG-4661)

STARTING/ COMPLETION DATE : 10/78 - 09/80 : FUNDING : ESTIMATED - FY78 / $ 60000
TASK CODE=C6118-075 **EPA=R806107-01 ** (GRANT) PRIOR FY /

EPA OFFICER,: RF LEWIS EPA/MERL - CINC
INVESTIGATOR,: D JENKINS UNIV OF CALIFORNIA BERKELEY CAMPUS
MILESTONES...: 01/81 -FINAL REPORT RECEIVED
07/81 -FINAL REPORT PUBLISHED
PLAN ID.....: (AP=6118)(DU=8106) WASTEWATER TREATMENT TECHNOLOGY PROGRAMS
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN=000607 SSIE-ZZ 404 EPA -R806107-01 TASK-C6118-075
ORD -RC10C30-1078 MAND-10-01 AP -6118
DU -8106 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVE OF THE RESEARCH IS TO DETERMINE THE INFLUENCE OF FACTORS SUCH AS DO, SUBSTRATE CONCENTRATION, AND REACTOR COMPARTMENTALIZATION ON ACTIVATED SLUDGE BULKING. CONTINUOUS FLOW ACTIVATED SLUDGE UNITS WILL BE OPERATED ON DOMESTIC SEWAGE AT VARIOUS LOADING, MIXED LIQUOR DO CONCENTRATIONS AND AS COMPLETELY MIXED OR COMPARTMENTALIZED REACTORS. THE EFFECT ON BULKING WILL BE ASSESSED BY ZONE SETTLING VELOCITY, SVI AND FILAMENT NUMBER AND LENGTH MEASUREMENT.

**PROJECT: 03917-SEPARATION OF COMPOUNDS WITH ANTI-CARCINOGENIC PROPERTIES FROM MARINE INVERTEBRATES

STARTING/ COMPLETION DATE : 06/78 - 06/81 : FUNDING : ESTIMATED - FY78 / $ 40000
TASK CODE=Q775 -02 **EPA=R806108-01 ** (GRANT) PRIOR FY /

EPA OFFICER,: NL RICHARDS EPA/ERL -GULF BREEZE
INVESTIGATOR,: CW CHANG UNIV OF WEST FLORIDA GRADUATE SCH
MILESTONES...: 10/79 -DEVELOP METHODS FOR CHARACTERIZATION OF TISSUE CARCINOGENS
10/80 -PILOT FIELD TRIAL
10/81 -FIELD MONITORING OF CARCINOGENS
PLAN ID.....: (AP=775)(DU=) * NO TEXT FOUND **
MANDATE.....: 20-99 ONAL CANCER INST. 0051
30-99 OGY 0051
ORDIS CODES..: RECN=003917 SSIE-ZZ 231 EPA -R806108-01 TASK-Q775 -02
ORD -RW10C30-5078 MAND-20-99 MAND-30-99
AP -775 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE ENVIRONMENTAL PROTECTION AGENCY AND OTHER ORGANIZATIONS WITH LEGISLATIVE MANDATES TO DETECT ENVIRONMENTAL CARCINOGENS ARE CONFRONTED WITH THE TASKS OF DETECTING ENVIRONMENTAL MUTAGENS/CARCINOGENS IN THE PRESENCE OF INTERFERING COMPOUNDS. IN RELATED STUDIES OF EQUAL IMPORTANCE ARE THE RECENT GOALS IN DISCOVERING ANTI-CARCINOGENS FROM VARIOUS MARINE ORGANISMS. ONE ASPECT OF THE PRESENT RESEARCH UTILIZING A SYSTEMS APPROACH IS TO ESTABLISH THE METHODOLOGY OF CONCENTRATION, SEPARATION, AND DETECTION OF MUTAGENS/CARCINOGENS (OR ANTI-CARCINOGENS). IN THE AREA OF DETECTION OF MUTAGENS/CARCINOGENS, FOR EXAMPLE, COMPOUND(S) WHICH COULD INTERFERE WITH THE TESTING PROTOCOLS PRESENT(S) A PROBLEM IN THE VALIDITY OF THESE RESULTS. AS PART OF THE EPA, GULF BREEZE LABORATORY MISSION TO INTEGRATE VARIOUS RELATED PROJECTS WITH THE OVERALL GOAL OF DETECTING AND PROVIDING TESTING PROTOCOLS FOR ENVIRONMENTAL MUTAGENS/CARCINOGENS, THE PURPOSE OF THIS RESEARCH IS TO DEVELOP PROCEDURES FOR THE (1) CONCENTRATION, SEPARATION, AND DETECTION OF THESE DELETERIOUS POLLUTANTS FROM THE MARINE ENVIRONMENT, AND (2) EXTRACTION, SEPARATION, AND IDENTIFICATION OF ANTI-CARCINOGENS FROM MARINE INVERTEBRATES. IN THESE STUDIES THE RESEARCH WILL INVOLVE THE LABORATORY FACILITIES OF THE UNIVERSITY OF WEST FLORIDA AND THE ENVIRONMENTAL PROTECTION AGENCY, GULF BREEZE, FLORIDA.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
* OFFICE OF RESEARCH AND DEVELOPMENT *
LIST OF PROJECTS FROM MATCHED GRANT SYSTEM INPUT
* O R D I S D A T A E X T R A C T *

**PROJECT: 03834-ENVIRONMENTAL EFFECTS AND ACCEPTABILITY OF EFFLUENTS FROM RUM DISTILLERIES

STARTING/ COMPLETION DATE : 05/78 - 11/78 : FUNDING : ESTIMATED - FY78 / $ 119875
TASK CODE=P608C-34 **EPA=R806110-01 ** (GRANT) PRIOR FY /

EPA OFFICER,.:	F LOWMAN	EPA/ERL - NARR	
INVESTIGATOR,.:	MJ CANDY	COLL OF THE VIRGIN ISLANDS	UNDERGRADUATE SCH
	R CASTRO	COLL OF THE VIRGIN ISLANDS	UNDERGRADUATE SCH
	T PURCELL	COLL OF THE VIRGIN ISLANDS	UNDERGRADUATE SCH
	J KIMMEL	COLL OF THE VIRGIN ISLANDS	UNDERGRADUATE SCH
	E KLOS	COLL OF THE VIRGIN ISLANDS	UNDERGRADUATE SCH

MILESTONES,..: 11/78 -PROJECT REPORT
PLAN ID.....: (AP-608C)(DU-B115) MARINE & ESTUARINE ECOLOGICAL PROCESSESS & EFFECTS (IBA 608)
MANDATE.....: 20-41 DAA FOR WATER ENFORCEMENT
ORDIS CODES,.: RECN-003834 SSIE-GMA 4957 EPA -R806110-01 TASK-P608C-34
ORD -RP10851-2078 MAND-20-41 AP -608C
DU -B115 LABT-MEE

PROJ STATUS,.: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
COMMENT.....: SPLIT FUNDING, PE1BA608 - $59875, ONE - $60000, 0049
ABSTRACT.....: OBJECTIVES: (A) TO CHARACTERIZE THE RECEIVING WATERS AND BIOTIC COMMUNITIES (B) TO EVALUATE THE EFFECT OF RUM PLANT EFFLUENT ON THE ENVIRONMENT (C) TO TEST THE ENVIRONMENTAL ACCEPTABILITY OF RUM PLANT EFFLUENT (D) TO SURVEY THE LITERATURE OF THE FIELD AND TO REVIEW TREATMENT AND/OR USE TECHNOLOGIES. APPROACH: INTENSIVE FIELD WORK WILL BE CARRIED OUT IN THE AREA OF A RUM EFFLUENT PLUME SOUTH OF ST. CROIX, USVI, TO DETERMINE HYDROLOGY, MARINE ECOLOGY, AND IN-SITU EFFECTS OF THE DISCHARGE. THESE WILL BE CARRIED OUT IN CONJUNCTION WITH LABORATORY TESTS IN BIOASSAY AND BIOCONVERSION OF THE WASTES AND EXTENSIVE LITERATURE AND TECHNOLOGY REVIEWS.

**PROJECT: 00534-THE MOVEMENT AND EFFECTS OF COMBINED SEWER OVERFLOW SEDIMENTS IN RECEIVING WATERS

STARTING/ COMPLETION DATE : 08/78 - 08/79 : FUNDING : ESTIMATED - FY78 / $ 75150
TASK CODE=C611A-0010 **EPA=R806111-01 ** (GRANT) PRIOR FY /

EPA OFFICER.:	JN ENGLISH	EPA/MERL - CINC	
INVESTIGATOR.:	SL KLEMETSON	COLORADO STATE UNIV	AGRIC ENG DEPT
	T KEEFER	COLORADO STATE UNIV	AGRIC ENG DEPT
	DB HENDRICKS	COLORADO STATE UNIV	AGRIC ENG DEPT
	R SIMONS	COLORADO STATE UNIV	AGRIC ENG DEPT
	R MCQUIVEY	COLORADO STATE UNIV	AGRIC ENG DEPT

MILESTONES...: 02/80 -FINAL REPORT PUBLISHED
PLAN ID.....: (AP=611A)(DU=R106) URBAN RUNOFF POLLUTION CONTROL
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-000534 SSIE-GMA 5099 EPA -R806111-01 TASK-C611A-0010
ORD -RC10H30-1078 MAND-10-01 AP -611A
DU -R106 LAHT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH

ABSTRACT.....: OBJECTIVE/APPROACH: MODELING STUDY OF THE MOVEMENT AND FATE OF URBAN STORM WATER SEDIMENTS AND COMBINED SEWER OVERFLOW (CSO) SEDIMENT MATERIAL IN RECEIVING STREAMS. THE STUDY WILL BE CONDUCTED IN FOUR PHASES WHICH WILL INCLUDE: (1) DEFINITION OF THE CHARACTERISTICS OF CSO SEDIMENT AS THEY RELATE TO TRANSPORT IN RECEIVING WATERS; (2) MODIFICATION OF AN EXISTING MODEL FOR ROUTING SEDIMENT BY SIZE CLASS, AND APPLICATION OF THIS MODEL TO A SPECIFIC CSO SITE TO DETERMINE THE FATE OF THE CSO SEDIMENTS; (3) IDENTIFICATION OF PHYSICAL AND CHEMICAL INTERACTIONS IN THE RECEIVING WATER ENVIRONMENT AND THEIR POTENTIAL EFFECTS ON THE BEHAVIOR OF CSO SEDIMENTS AS PREDICTED BY MODELING ANALYSES; AND (4) A CURSORY REVIEW OF TRACER TECHNIQUES FOR TRACKING THE MOVEMENT OF CSO SEDIMENTS IN RECEIVING WATERS. FINAL OUTPUT: FINAL REPORT CONTAINING THE ABOVE DESCRIBED INFORMATION.

**PROJECT: 04037-ACADEMY FORUM ON THE DEVELOPMENT OF OCEAN RESOURCES

STARTING/ COMPLETION DATE : 06/78 - 08/79 : FUNDING : ESTIMATED - FY78 / $ 25000
TASK CODE=V625A-01 **EPA=R806115-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: C HALL EPA/HDQTRS- OEMI
INVESTIGATOR.: RR WHITE NATL ACADEMY OF SCI
MILESTONES...: 08/78 -REGIONAL WORKSHOP ON OCEAN RESOURCES (DELAWARE)
09/78 -REGIONAL WORKSHOP ON OCEAN RESOURCES (SEATTLE)
10/78 -REGIONAL WORKSHOP OCEAN RESOURCES (NEW ORLEANS OR GALVESTON)
01/78 -ACADEMY FORUM (WASHINGTON DC)
PLAN ID.....: (AP-625A)(OU-N140) EFFECTS OF ENERGY-RELATED POLL. ON ORGANISMS & ECOSYSTEMS
0054
MANDATE.....: 30-99 NOGRAPHY
ORDIS CODES..: REC#-004037 SSIE-GMA 5271 EPA -R806115-01 TASK-V625A-01
ORD -RV10830-3078 MAND-30-99 AP -625A
OU -N140 LABT-EMI

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: SCIENCE AND TECHNOLOGY HAVE OPENED THE OCEANS AS A SOURCE OF ABUNDANT MATERIALS, ENERGY, AND FOOD. OCEAN ENGINEERING TECHNOLOGY AND PROCEDURES, HOWEVER, ARE BECOMING MORE COSTLY AND INCREASINGLY COMPLEX AS THESE ACTIVITIES EXTEND INTO HARSHER AND MORE REMOTE REGIONS, AND CONCERNS MOUNT FOR THE PROTECTION OF THE ENVIRONMENT, THE CONSERVATION OF RESOURCES, AND THE SAFETY OF HUMAN LIFE. THESE CONCERNS HAVE RESULTED IN CONFLICTING AND RESTRICTIVE REGULATORY POLICIES AS WELL AS COUNTERPRODUCTIVE DELAYS FOR ALL CONCERNED. IN AN EFFORT TO FIND NEW WAYS OF COMMUNICATION AMONG THE VARIOUS GROUPS INTERESTED IN THE BROAD TOPIC OF THE DEVELOPMENT OF OCEAN RESOURCES, IT IS PROPOSED THAT THEY BE BROUGHT TOGETHER IN AN ACADEMY FORUM IN REGIONAL WORKSHOPS AND EVENTUALLY IN PLENARY SESSIONS IN WASHINGTON, D.C., AT WHICH TIME THE DISCUSSION CAN BE SHARED WITH REPRESENTATIVES OF GOVERNMENT, INDUSTRY, AND PUBLIC INTEREST GROUPS. THE OBJECTIVES OF THIS ACADEMY FORUM INCLUDE: TO SEEK NEW WAYS FOR CONSTRUCTIVE PARTICIPATION OF SCIENTISTS, SEA TECHNOLOGISTS, AND CITIZENS TO FORMULATE PROGRAMS FOR THE BENEFICIAL UTILIZATION OF OCEANS WHILE PROTECTING THE GOVERNMENT, TO DETERMINE THE LONG- AND SHORT-TERM ISSUES EMERGING FROM THE FURTHER DEVELOPMENT OF OCEAN RESOURCES, AND TO PLACE THESE ISSUES IN SOME ORDER OF PRIORITY.

**PROJECT: 00430-MANUFACTURE AND USE OF MODULAR EQUIPMENT FOR CONTROL AND RECOVERY OF OIL SPILLS BY GELATION WITH AMINE CARBAMATES
STARTING/ COMPLETION DATE : 09/78 - 08/79 : FUNDING : ESTIMATED - FY78 / $ 75000
TASK CODE=B623C-838 **EPA=R806118-01 ** (GRANT) PRIOR FY /

EPA OFFICER,: U FRANK EPA/IERL - CINC
INVESTIGATOR,: WW BANNISTER UNIV OF LOWELL GRADUATE SCH
EE NIEMI UNIV OF LOWELL GRADUATE SCH
DG SHEPARD UNIV OF LOWELL GRADUATE SCH
WA CURBY UNIV OF LOWELL GRADUATE SCH
MILESTONES...: 08/79 -FINAL REPORT: MANUFACTURE OF EQUIPMENT FOR GELATION OF SPILLED O IL
PLAN ID.....: (AP-623C)(DU-N105) ENERGY RESOURCE EXTRACTION AND HANDLING, OIL & GAS PROD.
MANDATE.....: 10-99 -NUCLEAR ENERGY) PL 93-577 0009
ORDIS CODES..: RECN-000430 SSIE-ZZ 420 EPA -R806118-01 TASK-B623C-838
ORD -R810C30-1078 MAND-10-99 AP -623C
DU -N105 LABT-EMI

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE MAIN OBJECTIVE OF THIS PROJECT IS TO DEVELOP AND TEST FULL-SCALE OIL GELATION EQUIPMENT FOR USE IN THE RECOVERY OF SPILLED OIL. THIS PROJECT WAS PROPOSED IN RESPONSE TO THE SUCCESSFUL RESULTS OF EPA GRANT NO. R804628-01 "NEW AMINE CARBAMATE TECHNIQUES FOR USE IN OIL SPILL RECOVERY OPERATIONS". THE PURPOSE OF THE PRESENT GRANT IS TO EXTRAPOLATE THE PREVIOUS RESULTS TO FULL SCALE OPERATIONAL SITUATIONS, WITH CONSTRUCTION, TESTING AND EVALUATION, AND REAL-LIFE USE OF PROTOTYPE MODULAR EQUIPMENT. THE PROPOSED WORK WILL INCLUDE CONSTRUCTION OF EQUIPMENT FOR THE APPLICATION OF GELATION REAGENTS ONTO SPILLED OIL, AND DEVELOPMENT AND TESTING OF GELLED OIL RECOVERY DEVICES. THE SPECIFIC OBJECTIVES ARE: A) DESIGN AND CONSTRUCTION OF PROTOTYPE "BACK-PACK" EQUIPMENT FOR THE GELATION OF RELATIVELY SMALL OIL SPILLS (CA. 50-500 GALLONS). B) TESTING OF BACK-PACK OIL GELATION EQUIPMENT IN AREAS THAT ARE INACCESSIBLE TO CONVENTIONAL OIL SPILL CONTROL AND RECOVERY EQUIPMENT. AREAS UNDER CONSIDERATION ARE SWAMPS, MARSHES, SMALL LAKES OR PONDS, RIVERS AND STREAMS. TESTS WILL INCLUDE SPILL CONTROL AND RECOVERY EFFORTS OF INDIVIDUAL WORKERS EQUIPPED WITH BACK-PACKS. C) DESIGN AND CONSTRUCTION OF A PROTOTYPE MODULAR OIL GELATION APPARATUS OF SUFFICIENT CAPABILITY TO HANDLE SMALL TO MEDIUM SIZE OIL SPILLS (UP TO MAGNITUDES OF SEVERAL THOUSANDS OF GALLONS). D) TESTING OF MODULAR OIL GELATION EQUIPMENT AT THE EPA, OHMSETT FACILITY AND IN SPILL IMPACTED AREAS. THE EQUIPMENT WILL ALSO BE TESTED FOR OPERATION FROM BRIDGES, SCAFFOLDING OR OTHER STRUCTURES OVER STREAMS AND RIVERS. SKIMMER CRAFTS, NETS OR SEINES WILL BE USED TO RECOVER GELLED OIL IN THESE TESTS.

**PROJECT: 01847-ASSESSMENT OF TURBIDITY NETWORK DATA

STARTING/ COMPLETION DATE : 08/78 - 09/80 : FUNDING : ESTIMATED - FY78 / $ 19869
TASK CODE=G603A-AE-27 **EPA=R806124-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: H VIEHROCK EPA/ESRL - RTP
INVESTIGATOR.: E ROBINSON WASHINGTON STATE UNIV SCH OF ENG
MILESTONES...: 09/80 -FINAL REPORT
PLAN ID.....: (AP-603A)(DU-A125) ATMOSPHERIC PROCESSES AND EFFECTS
MANDATE.....: 10-02 CLEAN AIR ACT
ORDIS CODES..: RECN-001847 SSIE-GMA 5177 EPA -R806124-01 TASK-G603A-AE-27
ORD -RG10830-1078 MAND-10-02 AP -603A
DU -A125 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THIS RESEARCH PROGRAM WILL EVALUATE AND ASSESS THE ATMOSPHERIC TURBIDITY NETWORK DATA OBTAINED OVER THE UNITED STATES SINCE THE LATE SIXTIES. STANDARD QUALITY CONTROL AND ASSURANCE TECHNIQUES WILL BE USED IN EVALUATING THE DATA. THE VALID DATA WILL BE ANALYZED FOR SPATIAL VARIATIONS AND TEMPORAL TRENDS. THE IMPACT OF METEOROLOGICAL PARAMETERS ON THE TREND WILL BE EXAMINED AND INTERPRETED. THEN THE SPATIAL VARIATIONS AND TEMPORAL TRENDS WILL BE CORRELATED WITH AIR QUALITY VARIATIONS AND TRENDS.

**PROJECT: 03784-EFFECTS OF POLYCHLORINATED BIPHENYLS ON GREAT LAKES PHYTOPLANKTON

STARTING/ COMPLETION DATE : 09/78 - 04/81 : FUNDING : ESTIMATED - FY78 / $ 160000
TASK CODE=N769 -043 **EPA=R806126-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: VJ BIERMAN EPA/ERL - DULUTH
INVESTIGATOR.: G RHEE STA DIV OF LABS/RES DEPT OF HLTH
MILESTONES...: 09/79 -ANNUAL REPORT
04/81 -FINAL REPORT
PLAN ID.....: (AP=769)(DU=) * NO TEXT FOUND **
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN=003784 SSIE=GMA 4941 EPA =R806126-01 TASK=N769 -043
ORD =RN10A30-1078 MAND=10-01 AP =769
PROJ STATUS..: PROJECT-ACTIVE DATA=ORIGINAL CATEGORY=RESEARCH
COMMENT.....: OBJ. OF PROJECT TO MEASURE BIOACCUMULATION OF PCBS 0048
GR. LAKES PHYTOPLANKTON AND EFFECTS OF PCBS ON NUTR 0048
UPTAKE AND GROWTH KINETICS. 0048

ABSTRACT.....: THE OBJECTIVE OF THE PROJECT IS TO MEASURE THE BIOACCUMULATION OF PCBS IN GREAT LAKES PHYTOPLANKTON AND THE EFFECTS OF PCBS ON NUTRIENT UPTAKE AND GROWTH KINETICS. POLYCHLORINATED BIPHENYLS (PCBS) HAVE BEEN USED WIDELY IN INDUSTRY AS PLASTICIZERS, DIELECTRICS, HEAT TRANSFER FLUIDS, ETC. DUE MAINLY TO THEIR MOLECULAR RECALCITRANCE TO DEGRADATION, THEY ARE WIDESPREAD IN ENVIRONMENTS. ENVIRONMENTAL PROBLEMS WITH THESE COMPOUNDS ARISE FROM THEIR ACCUMULATION IN AND TOXICITY TO LIVING ORGANISMS INCLUDING PHYTOPLANKTON. BIOACCUMULATION IS A MAJOR MECHANISM BY WHICH THESE TOXICANTS MANIFEST THEIR BIOLOGICAL EFFECTS, SINCE THEIR CONCENTRATION IN NATURAL WATERS IS USUALLY LOWER THAN THE TOXIC LEVELS IN LABORATORIES, IT WILL BE INVESTIGATED IN CONTINUOUS CULTURE EXPERIMENTS WHETHER THE ACCUMULATION IS RELATED TO LIPID CONTENTS OF ORGANISMS, ESPECIALLY IN UNICELLULAR ALGAE, OR WHETHER LIPID CONTENTS ARE THUS RELATED TO DIFFERENTIAL TOXICITY IN VARIOUS ALGAL SPECIES, IN RELATION TO THE PARTITION OF PCBS TO THE LIPID PHASE, IT WILL BE DETERMINED IF THIS PARTITION INTERFERES WITH NUTRIENT TRANSPORT BY ALTERING MEMBRANE CHARACTERISTICS AND HOW THE PARTITION AFFECTS GROWTH AND NUTRIENT UPTAKE KINETICS. UNDERLYING MECHANISMS OF THE EFFECT ON GROWTH WILL ALSO BE INVESTIGATED. A MAJOR MECHANISM BY WHICH RECALCITRANT TOXICANTS ARE REMOVED FROM WATER COLUMN IS THEIR PARTITION TO ORGANIC PARTICULATE MATTER AND THEIR SUBSEQUENT SINKING TO BOTTOM SEDIMENTS. IT IS KNOWN THAT DDT AND DIELDRIN CHANGE CELL MORPHOLOGY AND TEND TO PROMOTE THE FORMATION OF AGGREGATES IN TEST ORGANISMS. THUS, EFFECTS OF PCBS ON MORPHOLOGICAL CHANGES, SIZE DISTRIBUTION, CULTURE CHARACTERISTICS SUCH AS CLUMPING AND SINKING RATES WILL BE DETERMINED. THIS WORK WILL EXTENSIVELY USE CHEMOSTATS AND TURBIDOSTATS. EXPERIMENTAL ORGANISMS ARE ASTERIONELLA FORMOSA AND MICROCYSTIS SP. ISOLATED FROM THE GREAT LAKES ALONG WITH SCENEDESMUS SP. WHICH HAS BEEN EXTENSIVELY INVESTIGATED IN OUR LABORATORY AND IS COMMON IN THE GREAT LAKES. TWO ISOMERS OF PCBS (2,4'-DICHLORO AND 2,2',5-TRICHLORO) WILL BE EMPLOYED AS TOXICANTS.

**PROJECT: 00792-REMOVAL OF GIARDIA LAMBLIA IN DRINKING WATER PLANTS

STARTING/ COMPLETION DATE : 08/78 - 02/81 : FUNDING : ESTIMATED - FY78 / $ 50000
TASK CODE=C614A-082 **EPA=R806127-01 ** (GRANT) PRIOR FY /

EPA OFFICER,: GS LOGSDON EPA/MERL - CINC
INVESTIGATOR,: FB DEWALLE UNIV OF WASHINGTON SCH OF PUBLIC HLTH & COMM MED
MILESTONES,..: 06/79 -COMPLETE LAB STUDIES OF UNITS & PROCESSES FOR GIARDIA CYSTS REMOV AL
01/80 -COMPLETE FULL SCALE PLANT EVALUATION OF GIARDIA CYSTS REMOVAL
08/80 -COMPLETE FINAL REPORT
PLAN ID.....: (AP=614A)(DU=C110) WATER SUPPLY - WATER TREATMENT & SYSTEMS
MANDATE.....: 20-13 DAA FOR DRINKING WATER
ORDIS CODES..: RECN=000792 SSIE-ZZ 384 EPA -R806127-01 TASK-C614A-082
ORD -RC10C20-2078 MAND-20-13 AP -614A
DU -C110 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: IT IS THE PURPOSE OF THE PROPOSED STUDY TO INVESTIGATE AND DETERMINE THE REMOVAL OF CYSTS OF GIARDIA LAMBLIA, A PATHOGENIC PROTOZOA, IN DRINKING WATER TREATMENT PLANTS. THE LABORATORY AND FULL SCALE INVESTIGATION WILL EVALUATE INDIVIDUAL UNIT PROCESSES, SUCH AS SEDIMENTATION, COAGULATION, FILTRATION AND CHLORINATION, FOR THEIR ABILITY TO REMOVE CYSTS. OPERATIONAL CHARACTERISTICS OF EACH PROCESS WILL BE SYSTEMATICALLY VARIED TO STUDY ITS EFFECT ON CYST REMOVAL. GIARDIASIS IS A COMMONLY OCCURRING WATER-BORNE DISEASE; IN 1974 ALONE, 7 OUTBREAKS WERE REPORTED IN THE US AFFECTING 4987 PERSONS. THE DISEASE CAUSES DIARRHEA, CRAMPS, NAUSEA AND WEIGHT LOSS.

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**PROJECT: 03919-THE EFFECTS OF DRILLING MUD ON MARINE ORGANISMS

STARTING/ COMPLETION DATE : 06/78 - 06/79 : FUNDING : ESTIMATED - FY78 / $ 5000
TASK CODE=Q775F-03 **EPA=R806130-01 ** (GRANT) PRIOR FY /

EPA OFFICER,: NL RICHARDS EPA/ERL -GULF BREEZE
INVESTIGATOR,: RC GLASSEN FLORIDA STATE UNIV ARTS & SCI/CHEM DEPT
MILESTONES,..: 08/79 -DEVELOP METHODS FOR OFFSHORE TOXICITY TESTING
08/80 -VALIDATE METHODS, TEST XENOBIOTICS
08/81 -INTEGRATED ASSESSMENT OF EFFECTS OF OIL EXTRACTION
PLAN ID.....: (AP=775F)(DU=) * NO TEXT FOUND **
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
20-62 DAA FOR ENERGY ,MINERALS, AND INDUSTRY
0014
30-99 OGY
ORDIS CODES..: RECN=003919 SSIE-GMA 5496 EPA -R806130-01 TASK-Q775F-03
ORD -RQ10B30-5078 MAND-10-01 MAND-20-62
MAND-30-99 AP -775F LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: FEW STUDIES HAVE BEEN DONE WHICH EVALUATE THE ENVIRONMENTAL EFFECTS OF DRILLING MUDS DISCHARGED BY OFFSHORE OIL RIGS. ALTHOUGH THE EFFECTS OF DRILLING MUD ON THE STRUCTURE OF BENTHIC COMMUNITIES HAVE BEEN DOCUMENTED, CONTROLLED LABORATORY EXPERIMENTS ARE NEEDED. IN THE PROPOSED RESEARCH, EXPERIMENTS WILL BE CONDUCTED WHICH WILL USE SPECIAL LABORATORY TANKS CONTAINING A DIRECTIONAL WATER CURRENT TO ASSESS THE EFFECTS OF AT LEAST FOUR SELECTED DRILLING MUD COMPONENTS ON BENTHIC ORGANISMS. THESE EXPERIMENTS WILL BE CONDUCTED IN COOPERATION WITH THE EPA ENVIRONMENTAL RESEARCH LABORATORY AT GULF BREEZE, FLORIDA.

**PROJECT: 03876-THE EFFECTS OF DRILLING MUD ON MARINE ORGANISMS

STARTING/ COMPLETION DATE : 06/78 - 06/79 : FUNDING : ESTIMATED - FY78 / $ 25000
TASK CODE=0625A-1-14 **EPA=R806130-01 ** (GRANT) PRIOR FY /
EPA OFFICER,: NL RICHARDS EPA/ERL -GULF BREEZE
INVESTIGATOR,: RC GLASSEN FLORIDA STATE UNIV ARTS & SCI/CHEM DEPT
MILESTONES...: 08/79 -DEVELOP METHODS FOR OFFSHORE TOXICITY TESTING
08/80 -VALIDATE METHODS, TEST XENOBIOTICS
08/81 -INTEGRATED ASSESSMENT OF EFFECTS OF OIL EXTRACTION
PLAN ID.....: (AP=625A)(DU=N140) EFFECTS OF ENERGY-RELATED POLL. ON ORGANISMS & ECOSYSTEMS
ORDIS CODES..: RECN=003876 SSIE-ZZ 234 EPA -R806130-01 TASK-0625A-1-14
AP -625A DU -N140 LABT-HEE
PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY- UNKN
ABSTRACT.....: FEW STUDIES HAVE BEEN DONE WHICH EVALUATE THE ENVIRONMENTAL EFFECTS OF DRILLING MUDS DISCHARGED BY OFFSHORE OIL RIGS, ALTHOUGH THE EFFECTS OF DRILLING MUD ON THE STRUCTURE OF BENTHIC COMMUNITIES HAVE BEEN DOCUMENTED, CONTROLLED LABORATORY EXPERIMENTS ARE NEEDED. IN THE PROPOSED RESEARCH, EXPERIMENTS WILL BE CONDUCTED WHICH WILL USE SPECIAL LABORATORY TANKS CONTAINING A DIRECTIONAL WATER CURRENT TO ASSESS THE EFFECTS OF AT LEAST FOUR SELECTED DRILLING MUD COMPONENTS ON BENTHIC ORGANISMS. THESE EXPERIMENTS WILL BE CONDUCTED IN COOPERATION WITH THE EPA ENVIRONMENTAL RESEARCH LABORATORY AT GULF BREEZE, FLORIDA.

**PROJECT: 03432-RESOURCE CONSERVATION AND UTILIZATION IN ANIMAL WASTE MANAGEMENT

STARTING/ COMPLETION DATE : 10/78 - 09/80 : FUNDING : ESTIMATED - FY78 / $ 119840
TASK CODE=L770D-1-26 **EPA=R806140-01 ** (GRANT) PRIOR FY /
EPA OFFICER,: LR SHUYLER EPA/ERL - ADA
INVESTIGATOR,: RC LOEHR CORNELL UNIV SCH OF ENG/AGRIC ENG
JH MARTIN CORNELL UNIV SCH OF ENG/AGRIC ENG
MILESTONES...: 09/80 -FINAL REPORT SUBMITTED
PLAN ID.....: (AP=770D)(DU=B133) ANIMAL PRODUCTION
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN=003432 SSIE-GMA 5022 EPA -R806140-01 TASK-L770D-1-26
ORD -RL10830-1078 MAND-10-01 AP -770D
DU -B133 LABT-ALW
PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVE OF THIS PROJECT IS TO IDENTIFY AND CRITICALLY EVALUATE TECHNICALLY AND ECONOMICALLY FEASIBLE RESOURCE CONSERVATION AND UTILIZATION (RCU) OPPORTUNITIES ASSOCIATED WITH CURRENTLY USED AND UNDER-UTILIZED ANIMAL WASTE MANAGEMENT ALTERNATIVES. THE PROJECT WILL: A) CRITICALLY ANALYZE THE MANY RCU POSSIBILITIES ASSOCIATED WITH ENVIRONMENTALLY SOUND ANIMAL WASTE MANAGEMENT PRACTICES USING EXISTING INFORMATION AND DATA; B) EVALUATE IN GREATER DETAIL THE BETTER POSSIBILITIES THAT EMERGE FROM THE ABOVE ANALYSES USING PILOT PLANT AND FULL SCALE STUDIES. THE PROJECT WILL SHOW HOW ANIMAL WASTE MANAGEMENT APPROACHES CAN INTEGRATE ENVIRONMENTAL PROTECTION AND RESOURCE CONSERVATION OPPORTUNITIES. THE PROJECT WILL PLACE BENEFITS, COSTS, AND OPPORTUNITIES FOR RCU IN PRACTICAL PERSPECTIVE AND BY DOING SO INCREASE THE APPLICATION OF ANIMAL WASTE MANAGEMENT PRACTICES.

**PROJECT: 03875-EFFECTS OF DRILLING MUD CONSTITUENTS ON THE SEDIMENTARY MICOFLORA AND THE BASE OF THE MARINE BENTHIC FOOD WEB
STARTING/ COMPLETION DATE : 06/78 - 05/80 : FUNDING : ESTIMATED - FY78 / $ 41000
TASK CODE=0625A-1-13 **EPA=R806143-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: NL RICHARDS EPA/ERL -GULF BREEZE
INVESTIGATOR.: DC WHITE FLORIDA STATE UNIV ARTS & SCI/CHEM DEPT
KW THOEMKE FLORIDA STATE UNIV ARTS & SCI/CHEM DEPT
MILESTONES...: 08/79 -DEVELOP METHODS FOR OFFSHORE TOXICITY TESTING
08/80 -VALIDATE METHODS, TEST XENOBIOTICS
08/81 -INTEGRATED ASSESSMENT OF EFFECTS OF OFFSHORE OIL GAS EXPLOR, AND DEVELP.
PLAN ID.....: (AP=625A)(DU=N140) EFFECTS OF ENERGY-RELATED POLL. ON ORGANISMS & ECOSYSTEMS
ORDIS CODES..: RECN=003875 SSIE-ZZ 236 EPA =R806143-01 TASK=0625A-1-13
AP =625A DU =N140 LABT=HEE
PROJ STATUS..: PROJECT=ACTIVE DATA=ORIGINAL CATEGORY= UNKN
ABSTRACT.....: OFFSHORE DRILLING PLATFORMS DISCHARGE DRILLING FLUID INTO THE SEA WHICH MAY HAVE EFFECTS ON THE BENTHIC MARINE COMMUNITIES. THIS PROPOSAL IS PART OF A LARGER AND CONTINUING STUDY OF THE EFFECTS OF DRILLING MUDS AND INDIVIDUAL COMPONENTS OF THESE MUDS ON THE BENTHIC MARINE COMMUNITIES. THIS PROPOSAL SPECIFICALLY ADDRESSES THE EFFECTS OF THESE MUDS AND THEIR COMPONENTS ON THE BIOMASS, PHYSIOLOGICAL STATUS AND COMMUNITY STRUCTURES OF THE MICROBIAL COMMUNITIES AND RELATES THESE CHANGES TO THE BEHAVIOR AND PHYSIOLOGICAL VIGOR OF THE MICROCRUSTACEAN PRIMARY EUKARYOTIC CONSUMERS OF THE MICROBIAL COMMUNITIES WHICH FORM THE BASE OF THE BENTHIC FOOD WEBS. EFFORTS TO ACHIEVE A SENSITIVE AND REPRODUCIBLE MEASURE OF THE TROPHIC EFFICIENCY OF 14C INCORPORATION INTO THE MICROCRUSTACEAN PREDATORS BY CAREFULLY MONITORING THE PHYSIOLOGICAL STATUS OF THE FOOD SOURCE, THE MICROBIAL COMMUNITY, AND THE DETRITIVORE ITSELF SHOULD FORM THE BASIS OF AN ULTRA SENSITIVE BIOASSAY OF THE EFFECTS OF DRILLING MUDS IN THE FOOD CHAIN. THESE MICROCRUSTACEANS IN TURN OFTEN FORM A SIGNIFICANT PROPORTION OF THE FOOD SOURCE OF THE ANIMALS CONSUMED BY MAN SO TRANSFER OF POTENTIAL TOXICANTS FROM THE MICROBES INTO THE FOOD WEB CAN BE STUDIED.

**PROJECT: 00512-FLUIDIZED BED COMBUSTION OF RDF & SEWAGE SLUDGE - DULUTH, MINNESOTA
STARTING/ COMPLETION DATE : 07/78 - 09/80 : FUNDING : ESTIMATED - FY78 / $ 100000
TASK CODE=B624B-675 **EPA=R806144 ** (GRANT) PRIOR FY /

EPA OFFICER.: H WALL EPA/IERL - CINC
INVESTIGATOR.: UNKNOWN # LAKE SUPERIOR SAN DIST
MILESTONES...: 09/80 -FINAL REPORT RECEIVED
PLAN ID.....: (AP=624B)(DU=L110) ENVIRONMENTAL ASPECTS OF ENERGY CONSERVATION/ADVANCED ENERGY
MANDATE.....: 10-99 -NUCLEAR ENERGY) PL 93-577, (CWA) PL 92-500 0011
10-01 FEDERAL WATER POLLUTION CONTROL ACT
20-10 AA FOR WATER AND HAZARDOUS MATERIALS
30-99 NERATION 0011
ORDIS CODES..: RECN=000512 SSIE-GMA 5322 EPA =R806144 TASK=B624B-675
ORD =R810830-5078 MAND-10-99 MAND-10-01
MAND-20-10 MAND-30-99 AP =624B DU =L110
LABT-EMI
PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVE OF THIS PROJECT IS TO CARRY OUT A TECHNICAL, ECONOMIC, AND ENVIRONMENTAL EVALUATION OF THE SUBSYSTEMS OF A FLUIDIZED BED COMBUSTION UNIT CO-FIRING SEWAGE SLUDGE AND REFUSE DERIVED FUEL. TO BE EVALUATED ARE: 1) THE SOLID WASTE FUEL PREPARATION SYSTEM; 2) THE SLUDGE FUEL PREPARATION SYSTEM; 3) THE COMBUSTION SYSTEM; AND 4) THE ENERGY USING SYSTEM. A GRANT TO SUPPORT THIS WORK IS TO BE AWARDED IN THE FALL OF 1978. PARTIAL SUPPORT FOR THIS PROJECT IS BEING PROVIDED BY MERL, ORD, EPA.

**PROJECT: 00605-TECHNICAL, ENVIRONMENTAL AND ECONOMIC CO-DISPOSAL SYSTEM RESEARCH EVALUATION
STARTING/ COMPLETION DATE : 10/78 - 03/80 : FUNDING : ESTIMATED - FY78 / $ 199690
TASK CODE=C611B-070 **EPA=R806144-01 ** (GRANT) PRIOR FY /
EPA OFFICER,: H HALL EPA/MERL - CINC
INVESTIGATOR,: H ROD M LAKE SUPERIOR SAN DIST
MILESTONES,..: 02/80 -DRAFT FINAL REPORT
05/80 -FINAL REPORT
08/80 -REPORT PUBLISHED
PLAN ID.....: (AP=611H)(OU=H106) WASTEWATER TREATMENT TECHNOLOGY PROGRAMS
MANDATE.....: 40-99 0014
ORDIS CODES,.: RECN-000605 SSIE-GMA 5112 EPA -R806144-01 TASK-C611B-070
ORD -RC10H30-4078 MAND-40-99 AP -611H
OU -H106 LABT-ALH

PROJ STATUS,.: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: TECHNICAL, ECONOMIC AND ENVIRONMENTAL EVALUATION OF CO-DISPOSAL PLANT SUBSYSTEMS. SYSTEM PROPOSED FOR RESEARCH EVALUATION INCLUDE: 1. SOLID WASTE FUEL PREPARATION; 2. SLUDGE/FUEL PREPARATION; 3. COMBUSTION SYSTEM; 4. ENERGY USING SYSTEM.

**PROJECT: 03568-EFFECTS OF PLANFORM GEOMETRY ON TIDAL FLUSHING AND MIXING IN MARINAS

STARTING/ COMPLETION DATE : 10/78 - 07/79 : FUNDING : ESTIMATED - FY78 / $ 12400
TASK CODE=M608C-225 **EPA=R806146-01 ** (GRANT) PRIOR FY /
EPA OFFICER,: RJ CALLAWAY EPA/ERL - CORVALLIS
INVESTIGATOR,: RE NECE UNIV OF WASHINGTON ENG DEPT
EP RICHEY UNIV OF WASHINGTON ENG DEPT
MILESTONES,..: 07/79 -FINAL REPORT
PLAN ID.....: (AP=608C)(OU=H115) MARINE & ESTUARINE ECOLOGICAL PROCESSESS & EFFECTS (IBA 608)
MANDATE.....: 20-R10EPA REGION X
ORDIS CODES,.: RECN-003568 SSIE-ZZ 281 EPA -R806146-01 TASK-M608C-225
ORD -RM10C30-2078 MAND-20-R10 AP -608C
OU -H115 LABT-MEE

PROJ STATUS,.: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE DIRECT OBJECTIVE IS TO DETERMINE, BY QUANTITATIVE LABORATORY MEASUREMENTS, THE EFFECTS OF PARTICULAR GEOMETRY PARAMETERS UPON BOTH THE OVERALL (GROSS) WATEREXCHANGE RATE AND THE SPATIAL VARIABILITY IN LOCAL EXCHANGE RATE DUE TO TIDAL FLUSHING AND SMALL-BOAT BASINS. THE LONG-RANGE OBJECTIVE IS THE DEVELOPMENT OF BETTER PREDICTORS OF TIDAL FLUSHING OF PROPOSED BASINS, SO THAT IMPROVED ESTIMATES CAN BE MADE OF THE EFFECTS OF PROPOSED SMALL-BOAT HARBORS ON WATER QUALITY BOTH WITHIN AND ADJACENT TO THE HARBORS. RESULTS OF THE PROPOSED RESEARCH SHOULD PROVIDE GUIDANCE IN THE DEVELOPMENT OF MATHEMATICAL MODELS WHICH MIGHT ULTIMATELY REMOVE THE CURRENT NEED FOR SITE SPECIFIC PHYSICAL HYDRAULIC MODEL STUDIES OF PROPOSED BASINS. THE GEOMETRY PARAMETERS TO BE INVESTIGATED ARE: 1) PLANFORM GEOMETRY ASPECT RATIO; 2) RATIO OF ENTRANCE CROSS-SECTIONAL AREA TO BASIN PLANFORM AREA; 3) EFFECTING OF ROUNDING INTERIOR CORNERS, OTHER FACTORS HELD CONSTANT; 4) ORIENTATION AND LOCATION OF SINGLE ENTRANCES; AND 5) EFFECT OF TWO ENTRANCES VERSUS A SINGLE ENTRANCE. EXPERIMENTS WILL BE MADE IN A TIDE TANK PRODUCING REPETITIVE SINUSOIDAL TIDES. MODEL BASIN WILL HAVE A COMMON 10:1 VERTICAL DISTORTION. PER-CYCLE EXCHANGE RATES WILL BE DETERMINED BY A PHOTOGRAPHIC TECHNIQUE CALIBRATED AGAINST FLUORESCENT DYE CONCENTRATION METHOD.

**PROJECT: 03419-OPTIMIZING SALINITY CONTROL STRATEGIES FOR THE UPPER COLORADO RIVER BASIN
STARTING/ COMPLETION DATE : 08/78 - 07/80 : FUNDING : ESTIMATED - FY78 / $ 48145
TASK CODE=L770A-1-53 **EPA=R806148-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: LB HASKIN EPA/ERL - ADA
INVESTIGATOR.: WR WALKER COLORADO STATE UNIV AGRIC ENG DEPT
MILESTONES...: 07/80 -FINAL PROJECT REPORT
PLAN ID.....: (AP-770A)(DU-R133) IRRIGATED CROP PRODUCTION
MANDATE.....: 20-10 AA FOR WATER AND HAZARDOUS MATERIALS
ORDIS CODES..: RECN-003419 SSIE-GMA 5207 EPA -R806148-01 TASK-L770A-1-53
ORD -RL10830-2078 MAND-20-10 AP -770A
DU -R133 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVES: (A) TO DELINEATE THE REGIONS IN WHICH SALINITY CONTROL PROJECTS SHOULD BE IMPLEMENTED; (B) TO EVALUATE THE BEST SALINITY CONTROL POLICIES AS FUNCTIONS OF ALTERNATIVE WATER DEVELOPMENT SCENARIOS IN THE BASIN; (C) TO DETERMINE THE IMPACT OF STATE AND FEDERAL POLICIES ON THE COSTS OF UPPER BASIN SALINITY MANAGEMENT PLANS; AND (D) TO ASSESS THE SENSITIVITY OF THE DERIVED OPTIMAL POLICIES. APPROACH: (A) UPDATE EXISTING WATER AND SALT BUDGETS IN EACH OF THE UPPER BASIN'S SUBBASINS; (B) FOR THE IRRIGATED SECTORS, DELINEATE THE SALINITY CONTROL ACHIEVABLE BY LINING MAJOR AND MINOR CONVEYANCE SYSTEMS, REHABILITATING ON-FARM IRRIGATION FACILITIES IMPROVING IRRIGATION PRACTICES, AND DESALTING RETURN FLOWS; (C) EVALUATE THE OPTIMAL SALINITY CONTROL STRATEGIES FOR EACH SUBBASIN, RIVER SUBSYSTEM, AND THE AGGREGATED UPPER BASIN; (D) INVESTIGATE THE EFFECTS OF ALTERNATIVE INSTITUTIONAL CONSTRAINTS ON THE OPTIMIZATION OF SALINITY CONTROL STRATEGIES.

**PROJECT: 03786-A FEASIBILITY STUDY FOR THE MATHEMATICAL MODELING AND CONTROL OF CLADOPHORA IN THE GREAT LAKES
STARTING/ COMPLETION DATE : 06/78 - 01/79 : FUNDING : ESTIMATED - FY78 / $ 26600
TASK CODE=N769 -045 **EPA=R806149-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: NA THOMAS EPA/ERL - DULUTH
INVESTIGATOR.: RP CANALE UNIV OF MICHIGAN AEROSPACE ENG DEPT
MT AUER UNIV OF MICHIGAN AEROSPACE ENG DEPT
MILESTONES...: 01/79 -FINAL REPORT: FEASIBILITY OF MODELING GROWTH OF CLADOPHORA
PLAN ID.....: (AP-769)(DU-) * NO TEXT FOUND **
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-003786 SSIE-GMA 4938 EPA -R806149-01 TASK-N769 -045
ORD -RN10830-1078 MAND-10-01 AP -769

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVE OF THE PROPOSED WORK IS TO INVESTIGATE THE FEASIBILITY OF DEVELOPING MATHEMATICAL MODELS FOR CLADOPHORA WHICH CAN BE USED TO PREDICT THE EFFECTIVENESS OF ALTERNATIVE CONTROL MEASURES AND POLICIES. THE APPROACH WILL INVOLVE A COMPREHENSIVE REVIEW OF THE SCIENTIFIC LITERATURE AND VISITS TO LABORATORIES WHERE RESEARCH ON CLADOPHORA IS IN PROGRESS. FURTHERMORE, STUDIES OF CLADOPHORA IN LAKE HURON WILL BE CONDUCTED FOR THE PURPOSE OF DEMONSTRATING FIELD TECHNIQUES AND EVALUATING THE USEFULNESS OF ADDITIONAL WORK. THE STUDIES WILL INCLUDE MEASUREMENTS OF NITROGEN, PHOSPHORUS, AND VITAMINS IN BOTH THE WATER AND PLANT TISSUE. OTHER ECOLOGICAL FACTORS SUCH AS TEMPERATURE AND THE LOCATION OF POINT FIELD DATA WILL BE USED TO CONSTRUCT AN OVERALL MATHEMATICAL MODELING FRAMEWORK FOR CLADOPHORA WHICH CAN BE USED TO PREDICT THE IMPACT OF CONTROL STRATEGIES.

**PROJECT: 00322-OIL SHALE SYMPOSIUM - SAMPLING, ANALYSIS, AND QUALITY ASSURANCE

STARTING/ COMPLETION DATE : 09/78 - 10/78 : FUNDING : ESTIMATED - FY78 / $ 65000
TASK CODE=8623A-831 **EPA=R806156-01 ** (GRANT) PRIOR FY /

EPA OFFICER,: PE MILLS EPA/IERL - CINC
INVESTIGATOR,: R PRESSEY UNIV OF DENVER DENVER RES INST
MILESTONES,..: 07/78 -CALL FOR PAPERS, MAIL REGISTRATION FLYERS
08/78 -REVIEW ABSTRACTS, SELECT PAPERS
10/78 -PAPERS DUE
10/78 -DRAFT FINAL REPORT
10/79 -PROCEEDINGS MAILED
01/79 -FINAL REPORT RECEIVED
PLAN ID.....: (AP-623A)(DU-N105) FUEL PROCESSING
MANDATE.....: 20-62 DAA FOR ENERGY ,MINERALS, AND INDUSTRY
ORDIS CODES..: RECN-000322 SSIE-ZZ 225 EPA -R806156-01 TASK-8623A-831
ORD -RB10C30-2078 MAND-20-62 AP -623A
DU -N105 LABT-EMI

PROJ STATUS,.: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
COMMENT.....: V) ALL 0008
ABSTRACT.....: THIS SYMPOSIUM WILL PROVIDE A FORUM FOR THE STATEMENT OF THE STATE-OF-THE-ART IN SAMPLING, ANALYSIS, AND QUALITY ASSURANCE OF THE OIL SHALE INDUSTRY POLLUTANTS, AND OPINIONS FROM GOVERNMENTAL AND INDUSTRIAL RESEARCH ORGANIZATIONS AS TO THE FUTURE NEEDS IN THESE AREAS. TOPICS TO BE DISCUSSED INCLUDE: POLLUTANTS TO BE CHARACTERIZED AND QUANTIFIED; MEDIA TO BE EXAMINED; HEALTH EFFECTS, SAMPLING AND ANALYSIS METHODS; QUALITY ASSURANCE NEEDS; FUTURE DIRECTIONS OF METHODOLOGY, REFERENCE MATERIALS, AND INSTRUMENTATION DEVELOPMENT.

**PROJECT: 00786-PILOT SCALE EVALUATION OF BIOLOGICAL ACTIVATED CARBON FOR REMOVAL OF THM PRECURSORS

STARTING/ COMPLETION DATE : 09/78 - 09/81 : FUNDING : ESTIMATED - FY78 / $ 217000
TASK CODE=C614A-0061 **EPA=R806157-01 ** (GRANT) PRIOR FY /

EPA OFFICER,: K CARSWELL EPA/MERL - CINC
INVESTIGATOR,: RH GLAZE NORTH TEXAS STATE UNIV INST OF APPLIED SCI
MILESTONES,..: 12/81 -FINAL REPORT PUBLISHED
PLAN ID.....: (AP-614A)(DU-C110) WATER SUPPLY - WATER TREATMENT & SYSTEMS
MANDATE.....: 30-99 NEERING, CHEMISTRY, MICROBIOLOGY 0017
ORDIS CODES..: RECN-000786 SSIE-ZZ 351 EPA -R806157-01 TASK-C614A-0061
ORD -RC10C30-3078 MAND-30-99 AP -614A
DU -C110 LABT-ALM

PROJ STATUS,.: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVE/APPROACH: THIS POJECT WILL SEEK TO DETERMINE THE EFFICACY OF OZONE COMBINED WITH ACTIVATED CARBON FILTRATION, THE SO-CALLED BIOLOGICAL ACTIVATED CARBON (BAC) PROCESS, FOR THE TREATMENT OF SURFACE WATER SOURCES IN THE SHREVEPORT, LOUISIANA AREA WHICH CONTAIN HIGH DISSOLVED ORGANIC CARBON (DOC). A 10 GPM PILOT PLANT WILL BE CONSTRUCTED AND OPERATED AT THE AMISS FILTER PLANT IN SHREVEPORT. VARIOUS UNIT PROCESSES INCLUDING BAC, GAC, FLOCCULATION, PRE- AND POST-DISINFECTION WILL BE UTILIZED IN THE PILOT FACILITY. THE PRINCIPAL ANALYTICAL PARAMETERS TO BE MONITORED INCLUDE DOC, DISSOLVED ORGANIC HALOGEN (DOX), TRIHALOMETHANES (THM'S), TRIHALOMETHANE FORMATION POTENTIAL (THMFP), AND OTHER INDICATORS OF DISSOLVED ORGANIC CONTENT OF THE RAW AND TREATED WATERS. IN ADDITION, THE PROJECT WILL EXAMINE THE FEASIBILITY FOR SUBSTITUTION OF ACTIVATED CARBON AND/OR BIOLOGICAL ACTIVATED CARBON IN THE DUAL MEDIA FILTERS CURRENTLY IN USE AT THE AMISS FILTER PLANT FOR THE PURPOSE OF IMPROVING ORGANICS REMOVAL.

**PROJECT: 00790-SELENIUM REMOVAL FROM GROUNDWATER

STARTING/ COMPLETION DATE : 08/78 - 11/79 : FUNDING : ESTIMATED - FY78 / $ 53301
TASK CODE=C614A-063 **EPA=R806160 ** (GRANT) PRIOR FY /

EPA OFFICER,: D LANCH EPA/MERL - CINC
INVESTIGATOR,: A SUTHERLAND RAMONA MUN WATER DIST
RR TRUSSELL JAMES M MONTGOMERY
MILESTONES...: 09/78 -EXPERIMENTAL DESIGN
11/79 -FINAL REPORT
PLAN ID.....: (AP-614A)(DU-C110) WATER SUPPLY - WATER TREATMENT & SYSTEMS
MANDATE.....: 10-13 SOLID WASTE DISPOSAL ACT
ORDIS CODES..: RECN-000790 SSIE-GMA 5097 EPA -R806160 TASK-C614A-063
ORD -RC10830-1078 MAND-10-13 AP -614A
DU -C110 LABT-ALM

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVES OF THIS PROJECT ARE TO DEFINE AND OPTIMIZE THE OPERATIONAL PARAMETERS OF THE ACTIVATED ALUMINA ADSORPTION PROCESS FOR REMOVAL OF SELENIUM FROM GROUND-WATER. THE APPROACH TO THIS PROJECT FOR THE STUDY OF THE REMOVAL OF SELENIUM FROM DRINKING WATER HAS BEEN DEVELOPED SO THAT EACH PROGRESSIVE PHASE CONTRIBUTES TO AND SIMPLIFIES THE FOLLOWING PHASE. THE PROJECT HAS BEEN DIVIDED INTO THREE PHASES: I. ANALYTICAL TECHNIQUES, II. BENCH SCALE TESTS, AND III. PILOT PLANT STUDIES. STRAIGHTFORWARD TECHNIQUES FOR THE ANALYSIS OF SE(IV), SE(VI) AND ORGANIC SELENIUM IN WATER ARE AN IMPORTANT PREREQUISITE AS THEY WILL FACILITATE FULL CONCENTRATION ON THE SELENIUM REMOVAL PROCESS ITSELF. THE BENCH SCALE WORK WILL INVOLVE THE DEVELOPMENT OF ADSORPTION ISOTHERMS WHICH WILL BE USED TO EFFICIENTLY DESIGN COLUMN STUDIES. THE COLUMN TESTS WILL ALLOW PROMPT RESOLUTION OF OPTIMUM REGENERATION TECHNIQUES, RELATIVE SELECTIVITIES, AND SELENIUM BREAKTHROUGH. THE PILOT PLANT PHASE OF THE PROJECT WILL EVOLVE THE ENGINEERING DATA REQUIRED TO DETERMINE THE FEASIBILITY OF USING ACTIVATED ALUMINA TO REMOVE SE

**PROJECT: 03214-PERSISTENCE IN MODEL ECOSYSTEMS

STARTING/ COMPLETION DATE : 09/78 - 09/80 : FUNDING : ESTIMATED - FY78 / $ 19020
TASK CODE=K760B-340 **EPA=R806161-01 ** (GRANT) PRIOR FY /

EPA OFFICER,: J HILL EPA/ERL - ATHENS
INVESTIGATOR,: T GARD UNIV OF GEORGIA SCH OF LIBERAL ARTS
MILESTONES...: 09/79 -REPORT ON PROGRESS
09/80 -REPORT ON PROGRESS
09/81 -FINAL REPORT ON PERSISTENCE IN MODEL ECOSYSTEMS
PLAN ID.....: (AP-760B)(DU-L135) EXPOSURE FOR SOIL & WATER ROUTES
MANDATE.....: 30-99 EMS ANALYSIS 0031
ORDIS CODES..: RECN-003214 SSIE-ZZ 326 EPA -R806161-01 TASK-K760B-340
ORD -RK10C30-3078 MAND-30-99 AP -760B
DU -L135 LABT-ALM

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE MAIN OBJECTIVE OF THE RESEARCH PROPOSED HEREIN IS TO ESTABLISH CRITERIA GUARANTEEING PERSISTENCE IN STANDARD ECOSYSTEM DIFFERENTIAL EQUATION MODELS. PERSISTENCE MEANS THAT THE COMPONENTS OF THE MODEL SURVIVE INDEFINITELY AND SO ITS ABSENCE OR PRESENCE IS AN IMPORTANT QUALITY OF SUCH MODELS. THE TECHNIQUES USED ARE QUALITATIVE METHODS OF MATHEMATICAL ANALYSIS IN THE THEORY OF DIFFERENTIAL EQUATIONS. SPECIFICALLY, THESE TECHNIQUES INVOLVE THE CONSTRUCTION OF AUXILIARY FUNCTIONS AND APPLICATIONS OF THE METHODS OF DIFFERENTIAL INEQUALITIES. THIS WORK STEMS FROM RECENT INVESTIGATIONS OF PERSISTENCE BY THE PRINCIPAL INVESTIGATOR AND T.G. HALLUM FOR LOTKA-VOLTERRA TYPE FOOD WEB MODELS.

**PROJECT: 02035-BERYLLIUM AND RELATED METAL AEROSOL ANALYSES FOR INDUSTRIAL SOURCES

STARTING/ COMPLETION DATE : 08/78 - 07/79 : FUNDING : ESTIMATED - FY78 / $ 45000
TASK CODE=G712B-BA-30 **EPA=R806162-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: KT KNAPP EPA/ESRL - RTP
INVESTIGATOR.: JM NELSON FLORIDA STATE UNIV ARTS & SCI/CHEM DEPT
MILESTONES...: 07/78 -FINAL REPORT
PLAN ID.....: (AP-712B)(DU-A130) CHAR. AND MEASUREMENT METHODS DEVELOPMENT (AIR)
FINAL OUTPUT.: METHOD FOR MEASUREMENT OF BERYLLIUM AND RELATED MET 0039
AD SUPPORTINHG FIELD DATA. 0039
MANDATE.....: 10-02 CLEAN AIR ACT
30-99 SOL ANALYSES 0039
CURR. RESULTS: PROTON SCATTERING WORK COMPLETED AND X-RAY WAVELENG 0039
DISPERSION SPECTROMETER UNDER CONSTRUCTION. 0039
ORDIS CODES..: RECN-002035 SSIE-GMA 5197 EPA -R806162-01 TASK-G712B-BA-30
ORD -RG10B30-5078 MAND-10-02 MAND-30-99
AP -712B DU -A130 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: BERYLLIUM CONCENTRATIONS IN THE EMISSIONS FROM INDUSTRIAL PLANTS WILL BE SAMPLED AND MEASURED AS A FUNCTION OF TIME AND PARTICLE SIZE. A NEW ACCELERATOR-BASED METHOD, PROTON SCATTERING, WILL BE EMPLOYED FOR THE QUANTITATIVE ANALYSES. THESE RESULTS WILL BE COMPARED TO THOSE FROM METHODS CURRENTLY IN USE. EVALUATION OF THE CONCENTRATIONS OF RELATED METALS WILL BE PERFORMED BY X-RAY ANALYSES WITH A BROAD-RANGE, HIGH RESOLUTION CONVEX CRYSTAL SPECTROMETER WHICH IS BEING DEVELOPED. THE FINAL OUTPUT WILL BE A METHOD FOR THE MEASUREMENT OF BERYLLIUM AND RELATED METALS AND SUPPORTING FIELD DATA. THE PROTON SCATTERING WORK HAS BEEN COMPLETED AND THE X-RAY WAVELENGTH DISPERSION BROAD-RANGE, HIGH RESOLUTION CONVEX CRYSTAL SPECTROMETER IS UNDER CONSTRUCTION.

**PROJECT: 01849-SYNOPTIC METEOROLOGY AND AIR QUALITY PATTERNS IN THE ST. LOUIS RAPS PROGRAM

STARTING/ COMPLETION DATE : 04/77 - 08/78 : FUNDING : ESTIMATED - FY78 / $ 40000
TASK CODE=G603A-AE-29 **EPA=R806176-01 ** (GRANT) PRIOR FY77 / $ 15442

EPA OFFICER.: TR KASL EPA/ESRL - RTP
INVESTIGATOR.: E ROBINSON WASHINGTON STATE UNIV SCH OF ENG
MILESTONES...: 08/78 -REPORT: WEATHER TYPING AND PARTICULATE CONCENTRATION
PLAN ID.....: (AP-603A)(DU-A125) ATMOSPHERIC PROCESSES AND EFFECTS
MANDATE.....: 10-02 CLEAN AIR ACT
ORDIS CODES..: RECN-001809 SSIE-GMA 3860 1 EPA -R806176-01 TASK-G603A-AE-29
ORD -RG10B30-1078 MAND-10-02 AP -603A
DU -A125 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THIS RESEARCH PROGRAM HAS 2 OBJECTIVES: (1) TO DEVELOP AN OBJECTIVE CLASSIFICATION SYSTEM FOR THE SYNOPTIC WEATHER PATTERNS THAT AFFECT THE ST. LOUIS, MISSOURI AREA; AND (2) TO DETERMINE GENERAL OR AVERAGE AIR QUALITY PATTERNS USING THE RAPS DATA FILE FOR ST. LOUIS AS A FUNCTION OF PREVAILING SYNOPTIC WEATHER AS IDENTIFIED IN THE PATTERN CLASSIFICATION STUDY.

**PROJECT: 01079-EPIDEMIOLOGY OF SELECTED MARINE BEACHES IN MASSACHUSETTS

STARTING/ COMPLETION DATE : 06/78 - 05/79 : FUNDING : ESTIMATED - FY78 / $ 37706
TASK CODE=D607C-037 **EPA=R806178-01 ** (GRANT) PRIOR FY /

EPA OFFICER,: AP DUFOUR EPA/HERL - CINC
INVESTIGATOR,: DM DRUMMOND TUFTS UNIV SCH OF ENG
NM FONTNEAU TUFTS UNIV SCH OF ENG
MILESTONES...: 06/78 -START BEACH STUDY
09/78 -REPORT ON ILLNESS FINDINGS AT THOSE BEACHES
12/78 -INTEGRATE THESE FINDINGS WITH OTHER BEACHES FOR CRITERIA
PLAN ID.....: (AP-607C)(DU-R103) WATER QUALITY HEALTH EFFECTS: CRITERIA FOR RECREATIONAL & SHELLFISH-GROWING WATERS
MANDATE.....: 10-13 SOLID WASTE DISPOSAL ACT
ORDIS CODES..: RECN-001079 SSIE-GMA 5402 EPA -R806178-01 TASK-D607C-037
ORD -RD10830-1078 MAND-10-13 AP -607C
DU -8103 LABT-MEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVE IS TO MEASURE THE INCIDENCE OF DISEASE AMONG SWIMMERS AND NON-SWIMMERS AT LYNN BEACH AND REVERE BEACH, MARINE BEACHES IN METROPOLITAN BOSTON, MASSACHUSETTS. THE DATA WILL BE JOINED WITH WATER QUALITY DATA FROM THE SAME BEACHES AND WITH SIMILAR DATA FROM OTHER CITIES TO HELP QUANTIFY THE RELATIONSHIP BETWEEN WATER QUALITY AND DISEASE INCIDENCE AMONG THE BATHING POPULATION. THIS IS PART OF THE EFFORT TO EVALUATE THE HEALTH RISK RELATIONSHIPS INVOLVING BATHING BEACHES AND WATER POLLUTION. PREVIOUS STUDIES IN NEW YORK CITY AND NEW ORLEANS HAVE SHOWN THAT GASTROINTESTINAL SYMPTOMS OCCUR MORE FREQUENTLY AMONG SWIMMERS THAN AMONG NON-SWIMMERS. FURTHERMORE THE FREQUENCY OF GASTROINTESTINAL SYMPTOMS AMONG SWIMMERS APPEARS TO INCREASE WITH INCREASING E. COLI DENSITY. EPIDEMIOLOGICAL DATA ARE GATHERED BY INTERVIEW. FAMILY GROUPS ARE CONTACTED INITIALLY AS THEY LEAVE THE BEACH. SWIMMERS AND NON-SWIMMERS OF DIVERSE AGES ARE PRESENT IN SUCH GROUPS. INFORMATION ABOUT DEMOGRAPHIC VARIABLES AND WATER EXPOSURE ARE COLLECTED AT THIS TIME. ABOUT A WEEK LATER THE GROUP IS CONTACTED BY TELEPHONE AND INFORMATION ABOUT DISEASES IN THE PREVIOUS WEEK IS COLLECTED. THE STUDY WILL BE CONDUCTED SIMULTANEOUSLY ON TWO BEACHES OF DIFFERENT WATER QUALITY.

**PROJECT: 03523-AN INVESTIGATION OF BENTHIC AND FISH COMMUNITIES OF STOTTS AND EAGLE CREEKS AS RELATED TO MIP
STARTING/ COMPLETION DATE : 09/78 - 08/81 : FUNDING : ESTIMATED - FY78 / $ 60000
TASK CODE=M608A-226 **EPA=R806184-01 ** (GRANT) PRIOR FY /

EPA OFFICER,: JH GAKSTATTER EPA/ERL - CORVALLIS
INVESTIGATOR,: J GAMMON DE PAUW UNIV SCH OF LIBERAL ARTS
MILESTONES...: 09/79 -ANNUAL REPORT
09/80 -ANNUAL REPORT
09/81 -FINAL REPORT
PLAN ID.....: (AP-608A)(DU-8115) FRESHWATER ECOLOGICAL PROCESSESS & EFFECTS
FINAL OUTPUT,: REPORT EVAL. CHANGE IN STREAM COMM. 0042
MANDATE.....: 20-R05EPA REGION V
ORDIS CODES..: RECN-003523 SSIE-ZZ 275 EPA -R806184-01 TASK-M608A-226
ORD -RM10C30-2078 MAND-20-R05 AP -608A
DU -8115 LABT-MEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVE: ESTABLISH BASELINE BIOLOGICAL CONDITION AND TO EVALUATE THE EFFECT OF NON-POINT SOURCE POLLUTION CONTROLS ON FRESHWATER FISH AND BENTHIC INVERTEBRATE POPULATIONS. FINAL OUTPUT: REPORT THAT WILL EVALUATE THE CHANGE IN STREAM COMMUNITIES RESULTING FROM BEST MANAGEMENT PRACTICES IMPLEMENTATION AND SUBSEQUENT REDUCTION IN NONPOINT SOURCE POLLUTION.

**PROJECT: 01012-PRELIMINARY ASSESSMENT OF BY-PRODUCT CONTAMINATION IN AN AQUACULTURE
*ASTEWATER TREATMENT SYSTEM
STARTING/ COMPLETION DATE : 10/78 - 09/79 : FUNDING : ESTIMATED - FY78 / $ 30000
TASK CODE=D607A-006C **EPA=R806188-01 ** (GRANT) PRIOR FY /

EPA OFFICER,: NE KOWAL EPA/HERL - CINC
INVESTIGATOR,: S SERFLING APPL AQUATIC RES INST
D MENDOLA APPL AQUATIC RES INST
C ALSTEN APPL AQUATIC RES INST
MILESTONES...: 08/78 -PROJECT INITIATION
02/79 -PROJECT COMPLETION - RESULTS
PLAN ID.....: (AP-607A)(DU-R103) HEALTH EFFECTS: TREATMENT & DISPOSAL OF *ASTEWATER & SLUDGE
\NDATE.....: 30-99 CULTURE 0002
ORDIS CODES..: RECN-001012 SSIE-ZZ 724 EPA -R806188-01 TASK-D607A-006C
ORD -RD10C30-3078 MAND-30-99 AP -607A
DU -R103 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: POTENTIALLY VALUABLE FISH AND SHRIMP BY-PRODUCTS (TILAPIA, MACROBRACIUM R,) FROM A CONTROLLED ENVIRONMENT AQUACULTURE WASTEWATER TREATMENT SYSTEM ARE BEING EVALUATED FOR CONTAMINATION (AROCLOR 1254, DDT METABOLITES, PB, HG, & CD). OTHER COMPONENTS OF THE TREATMENT SYSTEM CONSISTING OF WATER HYACINTHS, SNAILS, AMPHIPODS AND BACTERIA WHICH ARE IN SERIES-CONNECTED TANKS WITHIN A GREENHOUSE WILL ALSO BE TESTED FOR CONTAMINANTS. THE PILOT FACILITY IS CAPABLE OF TREATING 3000 GALLONS PER DAY WITH A 4-DAY DETENTION TIME AND HAS DEMONSTRATED REMOVAL EFFICIENCIES OF 98% BOD 99% SUSPENDED SOLIDS 75% TKN 22% PHOSPORUS AND 18% TDS.

**PROJECT: 01603-TRANSPORT DIAGNOSIS OF HIGH RESISTIVITY FLY ASH IN ELECTROSTATIC PRECIPITATORS BY LASER DOPPLER INSTRUMENTATION

STARTING/ COMPLETION DATE : 10/78 - 06/82 : FUNDING : ESTIMATED - FY78 / $ 149014
TASK CODE=F624A-400 **EPA=R806192 ** (GRANT) PRIOR FY /

EPA OFFICER.:	LE SPARKS	EPA/IERL - RTP	
INVESTIGATOR.:	MK TESTEKMAN	UNIV OF ARKANSAS	GRAD INST OF TECH
	MK MAZUMDER	UNIV OF ARKANSAS	GRAD INST OF TECH
	RA SIMS	UNIV OF ARKANSAS	GRAD INST OF TECH
	RW RAIBLE	UNIV OF ARKANSAS	GRAD INST OF TECH
	PC MCLEOD	UNIV OF ARKANSAS	GRAD INST OF TECH
MILESTONES...:	06/82 -COMPLETE PROJECT		
PLAN ID.....:	(AP-624A)(OU-L110) UTILITY AND INDUSTRIAL POWER PRODUCTION 002A		
MANDATE.....:	30-99 SOL SCIENCE		
ORDIS CODES..:	RECN-001603	SSIE-ZZ 184	EPA -R806192 TASK-F624A-400
	ORD -RF10C30-3078	MAND-30-99	AP -624A
	OU -L110	LABT-EMI	
PROJ STATUS..:	PROJECT-ACTIVE	DATA-ORIGINAL	CATEGORY-RESEARCH

ABSTRACT.....: THE OVERALL OBJECTIVE OF THIS PROJECT IS DIAGNOSIS OF FLY ASH TRANSPORT IN ELECTROSTATIC PRECIPITATORS BY MEANS OF LASER DOPPLER INSTRUMENTATION. THE TWO MAJOR OBJECTIVES OF THIS PROJECT ARE: (1) TO DIAGNOSE EXPERIMENTALLY THE PROBLEMS ASSOCIATED WITH HIGH-EFFICIENCY REMOVAL OF FLY ASH FROM FLUE GASES BY ELECTROSTATIC PRECIPITATORS AND TO ESTABLISH THE EFFECTIVENESS OF CORRECTIVE PROCEDURES. (2) TO DEVELOP AN ANALYZER FOR CONTINUOUS REAL-TIME MONITORING OF THE PARTICULATE COLLECTION EFFICIENCY OF POLLUTION-CONTROL DEVICES AS A FUNCTION OF AERODYNAMIC SIZE IN THE RANGE OF 0.1 TO 25.0 M. TWO INSTRUMENTS, THE LASER DOPPLER VELOCIMETER (LDV) AND THE SINGLE PARTICLE AERODYNAMIC RELAXATION TIME (SPART) ANALYZER WILL PLAY KEY ROLES IN THE PROPOSED EXPERIMENTAL STUDIES. THE LDV WILL BE USED TO MEASURE SUCH PARAMETERS AS VELOCITY DISTRIBUTIONS, TURBULENCE INTENSITIES, BOUNDARY-LAYER FLOW, FLOW SEPARATION, AND PARTICULATE FLUX. THE MEASUREMENTS WILL BE MADE IN SITU AND WITHOUT DISTURBING THE FLOW FIELD. THE SPART ANALYZER WILL BE USED FOR REAL-TIME MONITORING OF PARTICULATE COLLECTION EFFICIENCY OF ELECTROSTATIC PRECIPITATORS AS A FUNCTION OF PARTICLE SIZE. IT IS ANTICIPATED THAT THE PROPOSED EXPERIMENTAL STUDY THAT WILL BE BASED ON THESE TWO INSTRUMENTATION SYSTEMS WILL PROVIDE ANSWERS TO SOME OF THE PRESENT PROBLEMS IN HIGH-EFFICIENCY ELECTROSTATIC PRECIPITATION OF FLY ASH IN POWER PLANTS BURNING LIGNITES AND OTHER LOW-SULFUR COALS.

**PROJECT: 03524-SEDIMENTATION AND PRODUCTIVITY OF SALMONID STREAMS

STARTING/ COMPLETION DATE : 09/78 - 08/81 : FUNDING : ESTIMATED - FY78 / $ 60000
TASK CODE=M608A-227 **EPA=R806195-01 ** (GRANT) PRIOR FY /
EPA OFFICER.: CA CALLAHAN EPA/ERL - CORVALLIS
INVESTIGATOR.: GR REYNOLDS UNIV OF IDAHO GRADUATE SCH
MILESTONES...: 08/81 -FINAL REPORT
PLAN ID.....: (AP=608A)(DU=R115) FRESHWATER ECOLOGICAL PROCESSESS & EFFECTS
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN=003524 SSIE-ZZ 276 EPA -R806195-01 TASK-M608A-227
ORD -RM10C30-107B MAND=10-01 AP -608A
DU -R115 LABT=NEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVE IS TO BETTER DEFINE THE EFFECTS OF FINE SEDIMENT DEPOSITED IN STREAMS ON THE PRODUCTIVITY OF THE STREAMS FOR SALMONIDS. SPECIFICALLY, 1) SYNTHESIZE THE RESULTS OF PREVIOUS RESEARCH, DEFINE KEY HABITAT REQUIREMENTS OF SALMONIDS, AND RELATE SEDIMENTATION TO HABITAT QUALITY AND PRODUCTIVITY OF SALMONID STREAMS; 2) CONDUCT FIELD AND LABORATORY STUDIES IN STREAMS TO FURTHER DEFINE THE RELATION BETWEEN DEGREE OF SEDIMENTATION, AQUATIC INVERTEBRATE ABUNDANCE AND FISH PRODUCTION; AND 3) CONDUCT FIELD AND LABORATORY STUDIES TO DETERMINE IF RIFFLE AREAS CAN BE USED AS INDEX AREAS TO MONITOR SEDIMENTATION HEALTH OF

**PROJECT: 00864-THE 1979 EPA/SHWRD MUNICIPAL SOLID WASTE MANAGEMENT SYMPOSIUM

STARTING/ COMPLETION DATE : 07/78 - 06/79 : FUNDING : ESTIMATED - FY78 / $ 34648
TASK CODE=C618A-096 **EPA=R806198-01 ** (GRANT) PRIOR FY /
EPA OFFICER.: RE LANDRETH EPA/MERL - CINC
INVESTIGATOR.: RA NEWELL STATE UNIV SYS OF FLORIDA FLORIDA TECHNOLOGICAL UNIV
MILESTONES...: 06/79 -FINAL REPORT
PLAN ID.....: (AP=618A)(DU=D110) SOLID & HAZARDOUS WASTE MANAGEMENT
MANDATE.....: 20-63 DAA FOR AIR, LAND, AND WATER
ORDIS CODES..: RECN=000864 SSIE-GMA 5095 EPA -R806198-01 TASK-C618A-096
ORD -RC10B30-207B MAND=20-63 AP -618A
DU -D110 LABT=ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE PURPOSE OF THE SYMPOSIUM IS: (1) TO PROVIDE AN OPPORTUNITY FOR RESEARCHERS, PRACTIONERS, AND OTHERS TO RECEIVE AN UP-DATE ON THE STATE-OF-THE-ART AND TO LEARN ABOUT RECENT RESEARCH FINDINGS DEALING WITH MUNICIPAL SOLID WASTE MANAGEMENT, AND (2) TO GATHER TOGETHER PEOPLE WHO ARE CONCERNED WITH MUNICIPAL SOLID WASTE RESOURCE RECOVERY AND DISPOSAL PROBLEMS FOR DIALOGUE REGARDING THE IMPLICATIONS AND APPLICATIONS OF RECENT RESEARCH RESULTS, PARTICULARLY FROM PROJECTS SUPPORTED BY SHWRD, MERL, EPA. THE APPROACH WILL BE TO BRING RESEARCHERS AND OTHER INTERESTED PERSONNEL FROM VARIOUS PARTS OF THIS AND OTHER COUNTRIES TO AN ATMOSPHERE CONDUCIVE TO FREE AND UNRESTRAINED DISCUSSIONS AND TO INTERCHANGE, INTERRELATE, AND CIRCULATE NEW INFORMATION THAT IS BEING GENERATED IN THE FIELD OF MUNICIPAL SOLID WASTE MANAGEMENT.

**PROJECT: 03336-LUBBOCK LAND TREATMENT SYSTEM RESEARCH AND DEMONSTRATION PROGRAM

STARTING/ COMPLETION DATE : 09/78 - 09/83 : FUNDING : ESTIMATED - FY78 / $ 9500000
TASK CODE=L611C-63 **EPA=S806204-01 ** (GRANT) PRIOR FY /

EPA OFFICER,: CC HARLIN EPA/ERL - ADA
INVESTIGATOR,: E COOK LUBBOCK CHRISTIAN COLLEGE INST OF WATER RES
HR GRIFFIN LUBBOCK CHRISTIAN COLLEGE INST OF WATER RES
H PRUITT LUBBOCK CHRISTIAN COLLEGE INST OF WATER RES
MILESTONES...: 09/79 -PROGRESS REPORTS
09/80 -PROGRESS REPORTS
09/81 -PROGRESS REPORTS
09/82 -PROGRESS REPORTS
09/83 -FINAL REPORT
PLAN ID.....: (AP-611C)(DU-8106) APPLICATION OF WASTEWATER TO LAND (SOIL TREATMENT SYSTEMS)
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-003336 SSIE-ZZ 552 EPA -S806204-01 TASK-L611C-63
ORD -RL10C30-1078 LABN-L611C-51 MAND-10-01
AP -611C DU -8106 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THIS PROJECT WILL BE CONDUCTED AT TWO SITES LOCATED IN THE SAME GENERAL AREA: (1) A NEWLY CONSTRUCTED LAND TREATMENT SYSTEM (THE HANCOCK SITE) AND (2) A LAND TREATMENT SYSTEM THAT HAS BEEN IN CONTINUOUS OPERATION FOR OVER 40 YEARS (THE GRAY SITE). THE PRINCIPAL OBJECTIVES ARE TO DEMONSTRATE AND EVALUATE A LARGE-SCALE, PROPERLY DESIGNED, AND EFFICIENTLY OPERATED LAND TREATMENT SYSTEM FOR THE SEMI-ARID REGION OF SOUTHWESTERN UNITED STATES (HANCOCK SITE) AND DETERMINE THE RECOVERY RATE OF AN EXISTING SYSTEM WHICH HAS BEEN GROSSLY OVERLOADED FOR SEVERAL YEARS (GRAY SITE). IN SUPPORT OF THESE MAJOR OBJECTIVES, RESEARCH AND EVALUATION STUDIES WILL BE CONDUCTED IN SEVERAL AREAS. THESE STUDY AREAS WILL INCLUDE BASELINE ENVIRONMENTAL STUDIES, GROUNDWATER EFFECTS, HEALTH EFFECTS, SOIL AND CROP RESPONSES, TECHNOLOGY DEVELOPMENT, ECONOMIC ASSESSMENTS, AND ECOLOGICAL STUDIES. THE RESULTS OF THESE STUDIES WILL PROVIDE INFORMATION FOR EVALUATING THE TWO PROJECT SITES AND SHOULD ALSO CONTRIBUTE SIGNIFICANT KNOWLEDGE TO LAND TREATMENT DESIGN AND OPERATION WHICH WILL BE APPLICABLE IN OTHER REGIONS

**PROJECT: 01782-INVESTIGATION OF THE IMPACT OF TOPOGRAPHIC AND LAND/SEA CIRCULATIONS ON
THE TRANSPORT AND DIFFUSION OF ATMOSPHERIC POLLUTANTS
STARTING/ COMPLETION DATE : 09/78 - 09/80 : FUNDING : ESTIMATED - FY78 / $ 39617
TASK CODE=G603A-AB-45 **EPA=R806207-01 ** (GRANT) PRIOR FY /
EPA OFFICER,: G HOLZWORTH EPA/ESRL - RTP
INVESTIGATOR,: RA PIELKE UNIV OF VIRGINIA ARTS & SCI/ENV SCI DEPT
RT MCNIDER STATE AIR POLL CONT COMM
PLAN ID.....: (AP=603A)(DU=A125) ATMOSPHERIC PROCESSES AND EFFECTS
MANDATE.....: 10-02 CLEAN AIR ACT
ORDIS CODES..: RECN=001782 SSIE=GMA 5175 EPA =R806207-01 TASK=G603A-AB-45
ORD =RG10B30-1078 MAND=10-02 AP =603A
DU =A125 LABT=ALM

PROJ STATUS..: PROJECT=ACTIVE DATA=ORIGINAL CATEGORY=RESEARCH
ABSTRACT.....: THE GENERAL INTENT OF THE PROPOSED INVESTIGATION IS TO EXAMINE THE EFFECT OF MESOSCALE TOPOGRAPHIC AND LAND/SEA INDUCED ATMOSPHERIC CIRCULATIONS ON AIR POLLUTANT CONCENTRATIONS. THE MAJORITY OF THE RESEARCH EFFORT WILL BE DIRECTED TOWARD THE SIMULATION OF THERMALLY DRIVEN CIRCULATIONS IN BROAD VALLEYS AND THE PREDICTION OF POLLUTANT TRANSPORT AND DIFFUSION IN SUCH CIRCULATIONS. OBSERVATIONS OF MOUNTAIN VALLEY WINDS, WHEN VIEWED IN LIGHT OF AIR POLLUTION CONSIDERATIONS, INDICATE THAT THE COMPLEX VERTICAL STRUCTURE AND RECIRCULATION POTENTIAL OF THESE WINDS COULD INTRODUCE SUBSTANTIAL ERRORS INTO CURRENT OPERATIONAL AIR POLLUTION PREDICTION METHODS WHICH EMPLOY GAUSSIAN DISPERSION MODELS. THE PROPOSED INVESTIGATION OF VALLEY CIRCULATIONS INTENDS TO USE THE MOST RECENT VERSION OF A MESOSCALE MODEL ORIGINALLY DESCRIBED BY PIELKE (1974). THE INITIAL COMPONENT OF THE INVESTIGATION WILL INVOLVE THE SIMULATION OF VALLEY CIRCULATIONS IN IDEALIZED TWO AND THREE DIMENSIONAL VALLEYS TO COMPARE THE PREDICTED CIRCULATIONS WITH THE DESCRIPTIVE AND OBSERVATIONAL INFORMATION AVAILABLE IN THE LITERATURE. ALONG WITH THE NUMERICAL SIMULATIONS, PARALLEL ANALYSES WILL BE UNDERTAKEN TO EXAMINE THE APPLICABILITY OF THE VARIOUS MODEL COMPONENTS TO THE VALLEY PROBLEM.

**PROJECT: 03230-MICROBIAL CONVERSION OF DELETERIOUS MOLECULES - KINETIC MODELS FOR
AQUATIC ENVIRONMENTS
STARTING/ COMPLETION DATE : 09/78 - 10/81 : FUNDING : ESTIMATED - FY78 / $ 70000
TASK CODE=K7758-213 **EPA=R806208-01 ** (GRANT) PRIOR FY /
EPA OFFICER,: DE PARIS EPA/ERL - ATHENS
INVESTIGATOR,: DF OLLIS PRINCETON UNIV ENG & APP SCI/AEROSPACE DEPT
MILESTONES...: 09/79 -INTERIM REPORT
09/80 -INTERIM REPORT
09/81 -FINAL REPORT ON KINETIC MODEL FOR MICROBIAL CONVERSION OF TOXICS
PLAN ID.....: (AP=7758)(DU=) * NO TEXT FOUND **
MANDATE.....: 30-99 HEMICAL ENGINEERING 0032
ORDIS CODES..: RECN=003230 SSIE=ZZ 331 EPA =R806208-01 TASK=K7758-213
ORD =RK10C30-3078 MAND=30-99 AP =7758
PROJ STATUS..: PROJECT=ACTIVE DATA=ORIGINAL CATEGORY=RESEARCH
ABSTRACT.....: THE OBJECTIVE OF THIS PROJECT IS TO DEVELOP A SIMPLE BUT GENERAL KINETIC FRAMEWORK WHICH DESCRIBES MICROBIAL DEGRADATION TRACE DELETERIOUS MOLECULES WHEN INTRODUCED INTO OTHERWISE "NORMAL" AQUATIC ENVIRONMENTS. CHEMOSTAT OPERATION AT LOW DILUTION RATES USING NATURAL, UNENRICHED MIXED POPULATIONS WILL PROVIDE DATA FOR DETERMINING KINETIC MODEL PARAMETERS. TRACE QUANTITIES OF MOLECULES TYPIFYING VARIOUS POLLUTANT MOLECULES (E.G., PHENOLS, PESTICIDES, ETC.) WILL BE INTRODUCED IN A STERILE FEED TO MULTIPLE CHEMOSTAT ARRANGEMENTS. THE MODEL DEVELOPED WILL INCLUDE ACCOUNTING FOR THE MAJOR PHENOMENA REPORTED TO DATE IN THE LITERATURE.

469A

**PROJECT: 02627-POTENTIAL ENVIRONMENTAL HAZARDS OF PESTICIDAL VIRUSES

STARTING/ COMPLETION DATE : 09/78 - 08/81 : FUNDING : ESTIMATED - FY78 / $ 77016
TASK CODE=H615A-8972 **EPA=R806210-01 ** (GRANT) PRIOR FY /

EPA OFFICER,: CY KAWANISHI EPA/HERL - RTP
INVESTIGATOR,: E HUANG UNIV OF NORTH CAROLINA SCH OF MED/PATH DEPT
MILESTONES,,,: 09/79 -PURITY DNA OF HELIO, ZEA AND SPODOP, FRUG, NUCL, POLYHED, VIRUSE S
09/79 -ESTABLISH RESTRICTION ENZYME FRAGMENT PATTERNS FOR THESE DNA
09/79 -PRELIMINARY DNA-DNA REASSOCIATION KINETICS STUDIES
09/79 -PREPARE HYPERIMMUNE SERUM TO PROTEINS OF THE 2 VIRUSES
PLAN ID,,,,,,: (AP=615A)(DU=E105) MULTI-ROUTE EXPOSURES: HEALTH IMPLICATIONS OF PESTICIDES
MANDATE,,,,,,: 10-06 FEDERAL INSECTICIDE, FUNGICIDE AND RODENTICIDE AC
ORDIS CODES,,: RECN=002627 SSIE=ZZ 692 EPA =R806210-01 TASK=H615A-8972
ORD =RH10C30-1078 MAND=10-06 AP =615A
DU =E105 LABT=HEE

PROJ STATUS,,: PROJECT=ACTIVE DATA=ORIGINAL CATEGORY=RESEARCH
ABSTRACT,,,,,: THE OVERALL OBJECTIVES OF THE PROPOSED RESEARCH ARE: (A) DETECTION AND EXAMINATION OF ANY BIOLOGICAL AND BIOCHEMICAL EFFECTS OF PESTICIDAL VIRUS ON HUMAN AND OTHER MAMMALIAN CELLS IN IN VITRO TISSUE CULTURE SYSTEM: THIS INCLUDES DETECTION OF THE PERSISTANCE OF VIRAL GENOME (INTEGRATED OR NON-INTEGRATED) IN VIRUS INFECTED CELLS BY VARIOUS NUCLEIC ACID HYBRIDIZATION AND IMMUNOLOGICAL TECHNIQUES, (B) OBSERVATION AND COMPARISON OF VIRAL GENE EXPRESSION, AND GENE AMPLIFICATION IN PERMISSIVE AND NON-PERMISSIVE INFECTION SYSTEMS, (C) STUDY OF THE GENETIC RELATEDNESS OF VARIOUS PESTICIDAL VIRUSES BY DNA-DNA REASSOCIATION KINETICS AND RESTRICTION ENDONUCLEASE FRAGMENTATION ANALYSES. PROGRAM W

**PROJECT: 03924-DEVELOPMENT OF A CARCINOGEN ASSAY SYSTEM UTILIZING ESTAURINE FISHES

STARTING/ COMPLETION DATE : 11/78 - 10/81 : FUNDING : ESTIMATED - FY78 / $ 70000
TASK CODE=Q787 -05 **EPA=R806212-01 ** (GRANT) PRIOR FY /

EPA OFFICER,: J COUCH EPA/ERL -GULF BREEZE
INVESTIGATOR,: J MARTIN UNIV OF SO MISS BIOL DEPT
L MIDDLEBROOKS UNIV OF SO MISS BIOL DEPT
D ELLENDER UNIV OF SO MISS BIOL DEPT
H PIERCE UNIV OF SO MISS BIOL DEPT
MILESTONES,,,: 10/81 -FINAL REPORT
PLAN ID,,,,,,: (AP=787)(DU=) * NO TEXT FOUND **
MANDATE,,,,,,: 10-03 TOXIC SUBSTANCES CONTROL ACT
10-06 FEDERAL INSECTICIDE, FUNGICIDE AND RODENTICIDE AC
20-64 DAA FOR HEALTH AND ECOLOGICAL EFFECTS
30-99 INOGEN ASSAYS 0014
ORDIS CODES,,: RECN=003924 SSIE=GMA 5505 EPA =R806212-01 TASK=Q787 -05
ORD =RQ10B30-5078 MAND=10-03 MAND=10-06
MAND=20-64 MAND=30-99 AP =787 LABT=HEE

PROJ STATUS,,: PROJECT=ACTIVE DATA=ORIGINAL CATEGORY=RESEARCH
ABSTRACT,,,,,: THE OBJECTIVE OF THIS PROPOSAL IS THE PROCUREMENT OF FUNDS NEEDED TO DEVELOP A CARCINOGEN ASSAY SYSTEM THAT EMPLOYS ESTAURINE FISH MAINTAINED IN A CONTROLLED ENVIRONMENT. FISH WILL BE EXPOSED TO THREE DIFFERENT ENVIRONMENTAL POLLUTANTS KNOWN TO BE HUMAN CARCINOGENS. THE TOTAL EFFECT OF THE CARCINOGENS WILL BE STUDIED. EFFECTS ON GROSS MORPHOLOGY WILL BE OBSERVED AND HISTOLOGICAL, CYTOCHEMICAL, BIOCHEMICAL, IMMUNOLOGIC, AND TISSUE CULTURE TECHNIQUES WILL BE EMPLOYED. AN IMPORTANT GOAL WILL BE THE DETECTION OF PRENEOPLASTIC LESIONS THAT MIGHT BE USED AS AN "EARLY WARNING" DETECTION SYSTEM FOR CARCINOGENS IN TH

**PROJECT: 03923-METABOLISM OF POLYAROMATIC HYDROCARBONS BY MIXED FUNCTION OXIDASES IN MARINE ORGANISMS

STARTING/ COMPLETION DATE : 09/78 - 09/81 : FUNDING : ESTIMATED - FY78 / $ 49900
TASK CODE=0787 -04 **EPA=R806213-01 ** (GRANT) PRIOR FY /

EPA OFFICER,: P SCHOOR EPA/ERL -GULF BREEZE
INVESTIGATOR,: P MELIUS AUBURN UNIV CHEM DEPT
D ELAM AUBURN UNIV CHEM DEPT
M KILGORE AUBURN UNIV CHEM DEPT
MILESTONES...: 09/81 -FINAL REPORT
PLAN ID.....: (AP=787)(OU=) * NO TEXT FOUND **
MANDATE.....: 10-03 TOXIC SUBSTANCES CONTROL ACT
10-06 FEDERAL INSECTICIDE, FUNGICIDE AND RODENTICIDE AC
20-54 DAA FOR HEALTH AND ECOLOGICAL EFFECTS
30-99 HEMISTRY
0014
ORDIS CODES..: RECN=003923 SSIE-GMA 5500 EPA -R806213-01 TASK-0787 -04
ORD -R810830-5078 MAND=10-03 MAND=10-06
MAND=20-64 MAND=30-99 AP -787 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: MIXED FUNCTION OXIDASES WILL BE INDUCED IN CERTAIN MARINE ORGANISMS AND THE RESULTING ENZYMES WILL BE EVALUATED FOR MUTAGENICITY. ATTEMPTS WILL BE MADE TO DETERMINE WHICH COMPONENT OF THE OVERALL ENZYME SYSTEM IS AFFECTED BY THE XENOBIOTIC INDUCING SUBSTANCES. SEPARATION OF THE METABOLITES WILL BE CARRIED OUT BY CHROMATOGRAPHIC PROCEDURES AND THESE COMPONENTS WILL BE TESTED FOR MUTAGENICITY.

**PROJECT: 00519-ENERGY CONSERVATION IN THE TREATMENT OF INDUSTRIAL WASTE WATER

STARTING/ COMPLETION DATE : 09/78 - 06/80 : FUNDING : ESTIMATED - FY78 / $ 102000
TASK CODE=B6248-847 **EPA=R806215-01 ** (GRANT) PRIOR FY /

EPA OFFICER,: RE MOURNIGHAN EPA/IERL - CINC
INVESTIGATOR,: KA VANWORMER TUFTS UNIV SCH OF ENG
DJ GOLDSTEIN WATER PURIFICATION ASSOCS
RF PROBESTEIN WATER PURIFICATION ASSOCS
RE HICKS WATER PURIFICATION ASSOCS
MILESTONES...: 06/80 -FINAL REPORT: ENERGY CONSERV. IN THE TREATMENT OF INDUST. WASTEW ATER
PLAN ID.....: (AP=6248)(OU=L110) ENVIRONMENTAL ASPECTS OF ENERGY CONSERVATION/ADVANCED ENERGY
MANDATE.....: 10-99 -NUCLEAR ENERGY) PL 93-577
0011
ORDIS CODES..: RECN=000519 SSIE-ZZ 427 EPA -R806215-01 TASK-B6248-847
ORD -RB10C30-1078 MAND=10-99 AP -6248
OU -L110 LABT-EMI

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: ENERGY IS CONSUMED WHEN WASTEWATER IS TREATED. PUBLIC LAW 92-500 HAS MANDATED THE APPLICATION OF "BEST AVAILABLE TECHNOLOGY" BY 1983. IT IS RECOGNIZED THAT THE APPLICATION OF THIS LAW WILL REQUIRE ENERGY AS WELL AS CAPITAL EXPENDITURES THAT, IN SOME INSTANCES, WILL BE LARGE. SEVERAL SITUATIONS IN A NUMBER OF INDUSTRIES HAVE BEEN FOUND WHERE SUBSTITUTION OF A NEW, INNOVATIVE TECHNOLOGY FOR A STANDARD WASTEWATER TREATMENT PROCEDURE HAS THE POTENTIAL TO SAVE LARGE AMOUNTS OF ENERGY. IT IS PROPOSED THAT THESE SITUATIONS BE INVESTIGATED THOROUGHLY TO DETERMINE WHETHER THE POTENTIAL FOR ENERGY SAVING IS AS EXPECTED AND TO ACCURATELY DEFINE ALL RESEARCH AND DEMONSTRATIONS NEEDED TO MAKE THE POTENTIAL ENERGY SAVINGS REAL ENERGY SAVED.

**PROJECT: 03926-THE UTILIZATION OF MOLLUSKS FOR MONITORING, SURVEILLANCE, & ASSESSING THE PUBLIC HEALTH SIGNIFICANCE OF POLYCYLIC AROMATICS (AHHRE
STARTING/ COMPLETION DATE : 10/78 - 09/79 : FUNDING : ESTIMATED - FY78 / $ 50400
TASK CODE=Q787 -07 **EPA=R806224-01 ** (GRANT) PRIOR FY /

EPA OFFICER..: J COUCH EPA/ERL -GULF BREEZE
INVESTIGATOR..: MC MIX OREGON STATE UNIV SCH OF SCI/ATMOS SCI DEPT
MILESTONES...: 09/79 -FINAL REPORT
PLAN ID.....: (AP-787)(DU=) * NO TEXT FOUND **
MANDATE.....: 10-03 TOXIC SUBSTANCES CONTROL ACT
10-06 FEDERAL INSECTICIDE, FUNGICIDE AND RODENTICIDE AC
20-64 DAA FOR HEALTH AND ECOLOGICAL EFFECTS
ORDIS CODES..: RECN=003926 SSIE=GMA 5504 EPA -R806224-01 TASK-Q787 -07
ORD -RU10830-5078 MAND-10-03 MAND-10-06
MAND-20-64 AP -787 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVES: MEASURE BASELINE LEVELS OF PAH IN INDIGENOUS BIVALVE MOLLUSKS; TO DEMONSTRATE THE PRACTICALITY OF MONITORING AND SURVEILLANCE STUDIES UTILIZING BIVALVE MOLLUSKS AS MONITORS OF ENVIRONMENTAL PAH; TO DETERMINE THE PREVALENCE OF CELLULAR PROLIFERATIVE DISORDERS IN SHELLFISH THAT INHABIT PRISTINE WATERS AND THOSE FROM ENVIRONMENTS CONTAMINATED WITH PAH; TO MEASURE BASELINE LEVELS OF ARYL HYDROCARBON HYDROXYLASE (AHH) IN M. EDULIS AND M. ARENARIA; TO EVALUATE THE FEASIBILITY OF USING AHH ASSAYS OF BIVALVE MOLLUSKS AS MONITORS FOR ENVIRONMENTAL CONTAMINATION; TO EVALUATE THE EFFECTS OF LOW LEVELS OF PAH ON THE POLLICIPES POLYMERUS BIOASSAY SYSTEM; AN TO MEASURE BASELINE LEVELS OF PAH IN A VARIETY OF MARINE SPECIES FROM DIFFERENT OREGON BAYS. APPROACH: (1) GC-MS FOR DETERMINING LEVELS OF SELECTED PAH; TLC -SPECTROPHOTOFLUORIMETRY FOR BENZO(A)PYRENE ANALYSIS OF SAMPLES. (2) SAMPLES AND ANALYSIS OF BIVALVE MOLLUSKS COLLECTED FROM TILLAMOOK, YAQUINA AND COOS BAYS BIMONTHLY OR QUARTERLY FOR PAH. (3) HISTOLOGICAL ANALYSIS OF M. ARENARIA AND M. EDULIS COLLECTED BIMONTHLY FROM YAQUINA AND COOS BAYS. (4) AHH ASSAYS USING ANDERSON'S METHODS; TEST FOR INDUCIBILITY OF AHH; ASSAY SHELLFISH FROM CLEAN AND POLLUTED ENVIRONMENTS FOR AHH. (5) BIOASSAY STUDIES UTILIZING EMBRYONIC AND LARVAL STAGES OF P. POLYMERUS TO ASSESS THE EFFECTS OF ENVIRONMENTAL LEVELS OF SELECTED PAH.

**PROJECT: 01409-SINGLE STAGE BIOLOGICAL NITRIFICATION STUDY

STARTING/ COMPLETION DATE : 08/78 - 08/79 : FUNDING : ESTIMATED - FY78 / $ 65000
TASK CODE=F610C-352 **EPA=R806234 ** (GRANT) PRIOR FY /

EPA OFFICER.: J RUPPERSBERGE EPA/IERL - RTP
INVESTIGATOR.: JR SUITLAS NATIONAL STEEL CORP
JA SINSEL NATIONAL STEEL CORP
JD HALL NATIONAL STEEL CORP
LD MCGRAW NATIONAL STEEL CORP
BM LARUE NATIONAL STEEL CORP
MILESTONES...: 08/78 -START - INITIATE TOXIC OR INHIBITORY STUDIES OF COMPOUNDS
02/79 -COMPLETE DATA ANAL. ON TOXIC OR INHIBITORY COMPOUNDS STUDY
05/79 -COMPLETE STUDY OF TOXIC OR INHIBIT CMPDS. IN COMB. STUDY
07/79 -COMPLETE STUDY OF PROCESS ENHANCEMENT AND PRIORITY POLLUTANTS
08/79 -COMPLETE FINAL REPORT ON TREATMENT EFFECTIVENESS AND RELIABILITY
PLAN ID.....: (AP-610C)(DU-8118) MATERIALS PRODUCTION, INDUSTRIAL PT. SOURCES (WATER) 0023
FINAL OUTPUT.: DEVELOPMENT & EVALUATION OF WASTE TREATMENT TECHNOL 0023
MANDATE.....: 10-99 A
ORDIS CODES..: RECN-001409 SSIE-ZZ 186 EPA -R806234 TASK-F610C-352
ORD -RF10C30-1078 MAND-10-99 AP -610C
DU -8118 LABT-EMI

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVE/APPROACH: INVESTIGATE THE FEASIBILITY OF REDUCING THE AMMONIA CONCENTRATION OF PRETREATED COKE PLANT FLUSHING LIQUOR TO A LEVEL EQUIVALENT TO THE PRIOR PUBLISHED "BAT" GUIDELINES THROUGH THE USE OF A SINGLE STAGE PHENOL-AMMONIA BIOLOGICAL REACTOR. PAST EXPERIMENTAL WORK HAS DEMONSTRATED THAT A SINGLE STAGE REACTOR HAS POTENTIAL APPLICABILITY. THE EXPERIMETAL WORK WILL CONCENTRATE UPON DEFINING THE CONCENTRATION OF VARIOUS COMPOUNDS CONTAINED IN THE FLUSHING LIQUOR WASTE WHICH ARE TOXIC TO THE PROCESS. METHODS OF ENHANCING THE BIOLOGICAL REACTION RATE AND THE EFFECTIVENESS OF THE PROCESS ON ELIMINATING PRIORITY POLLUTANTS WILL BE COVERED. THE WORK WILL BE PERFORMED IN LABORATORY SCALE REACTORS. FINAL OUTPUTS: THIS PROJECT WILL HELP DEVELOP AND EVALUATE AN INNOVATIVE WASTE TREATMENT TECHNOLOGY WHICH HAS THE POTENTIAL FOR COST EFFECTIVE ACHIEVEMENT OF BAT GUIDELINES FOR AMMONIA.

**PROJECT: 03228-RESOURCE AND ENVIRONMENTAL ISSUES OF AGRICULTURE IN THE UNITED STATES

STARTING/ COMPLETION DATE : 09/78 - 09/80 : FUNDING : ESTIMATED - FY78 / $ 193200
TASK CODE=K770F-017 **EPA=R806236-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: G* BAILEY EPA/ERL - ATHENS
INVESTIGATOR.: P CROSSON RES FOR THE FUTURE INC
S BROBAKER RES FOR THE FUTURE INC
K FREDERICK RES FOR THE FUTURE INC
MILESTONES...: 09/79 -ANNUAL REPORT
09/80 -FINAL REPORT: ENVIRON./RESOURCE PROBLEMS OF AGRICULTURE IN THE U S
PLAN ID.....: (AP-770F)(DU-H133) ENVIRONMENTAL IMPACT ASES. OF RENEWABLE RES.
MANDATE.....: 30-99 0 ANALYSIS AND FORECASTING 0031
ORDIS CODES..: RECN-005228 SSIE-ZZ 330 EPA -R806236-01 TASK-K770F-017
ORD -RK10C30-307R MAND-30-99 AP -770F
DU -H133 LABT-ALR

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: INCREASES IN U.S. AGRICULTURAL PRODUCTION BY 2010 MAY POSE SERIOUS THREATS TO THE ENVIRONMENT, PRIMARILY FROM EROSION, SOIL AND WATER SALINITY WITH IRRIGATION, AND FERTILIZER AND PESTICIDE POLLUTION. IF THESE THREATS MATERIALIZE, IT MOST LIKELY WILL BE BECAUSE OF HIGH LEVELS OF PRODUCTION OF GRAINS, SOYBEANS, AND COTTON. THIS STUDY SEEKS TO PROJECT THE QUANTITIES OF LAND, WATER, FERTILIZERS, AND PESTICIDES THAT MAY BE REQUIRED TO PRODUCE THESE (AND OTHER) CROPS; EXAMINE THE NATURE AND ASSESS THE RELATIVE IMPORTANCE OF ENVIRONMENTAL PROBLEMS RESULTING FROM THE USE OF THESE RESOURCES; AND EVALUATE ALTERNATIVE POLICIES AT BOTH STATE AND NATIONAL LEVELS FOR DEALING WITH THE PROBLEMS. THERE ARE THREE PRINCIPAL LINES OF INVESTIGATION: (1) AN ANALYSIS OF TRENDS IN THE RELATIVE PROFITABILITY OF IRRIGATED FARMING IN THE ARID WEST, THE GREAT PLAINS, AND THE AREA EAST OF THE GREAT PLAINS; (2) ASSESSMENT OF THE ECONOMIC AND ENVIRONMENTAL CHARACTERISTICS OF ALTERNATIVE TILLAGE, PEST MANAGEMENT, AND FERTILIZER TECHNOLOGIES; (3) ANALYZE CURRENT 208 PLANNING IN SELECTED STATES AND DISCUSS ALTERNATIVE STATE AND NATIONAL LEVEL POLICIES FOR CONTROL OF AGRICULTURAL POLLUTION. THIS PROJECT IS PART OF A PROGRAM OF WORK UNDERWAY AT RESOURCES FOR THE

**PROJECT: 00290-EFFECT OF ANIONS ON THE PRECIPITATION OF HEAVY METAL IONS FROM ELECTROPLATING WASTE
STARTING/ COMPLETION DATE : 08/78 - 09/79 : FUNDING : ESTIMATED - FY78 / $ 9000
TASK CODE=R6108-839 **EPA-R806247-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: MK STINSON — EPA/IERL - CINC
INVESTIGATOR.: JH SCHUMACHER — AMERICAN ELECTROPLATERS
LJ DURNEY — AMERICAN ELECTROPLATERS
HY CHEM — COLUMBIA UNIV — SCH OF ENG/APPL SCI

MILESTONES...: 09/79 -FINAL REPORT ON ANION EFFECTS ON HEAVY METAL PRECIPITATION
PLAN ID.....: (AP-6108)(DU-8118) MATERIALS PROCESSING, INDUSTRIAL PT. SOURCES (WATER)
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: NECN-000290 SSIE-ZZ 437 EPA -R806247-01 TASK-R6108-839
ORD -R810C30-1078 MAND-10-01 AP -6108
DU -R118 LABT-EMI

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OPERATORS OF SETTLING SYSTEMS FOR HEAVY METAL REMOVAL FROM PLATING EFFLUENTS ARE CONSTANTLY FACED WITH UNEXPLAINED FAILURES OF THE SYSTEMS TO SETTLE THE PRECIPITATED HEAVY METALS PROPERLY. THIS HAPPENS EVEN IN SYSTEMS KNOWN TO BE FREE OF COMPLEXING AND CHELATING AGENTS. IN TWO DOCUMENTED INSTANCES THIS HAS BEEN TRACED TO THE AMOUNT OF INORGANIC ANION PRESENT IN THE SYSTEM; IN ONE CASE CARBONATE ION; IN THE OTHER, SILICATE ION.THE ATTACHED PROPOSAL FOR RESEARCH AT COLUMBIA UNIVERSITY IS AIMED AT DETERMINING THE EFFECTS OF VARIOUS ANIONS ON THE SETTLING RATES OF PRECIPITATED METALLIC HYDROXIDES, AND IF POSSIBLE DETERMINING METHODS OF COUNTERACTING ANY UNDESIRED EFFECTS.

**PROJECT: 02078-SEPARATION OF ASBESTOS IN ENVIRONMENTAL SAMPLES BY ZONAL CENTRIFUGATION
STARTING/ COMPLETION DATE : 10/78 - 12/80 : FUNDING : ESTIMATED - FY79 / $ 59984
TASK CODE=G712H-HA-03 **EPA-R806255-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: J HAGMAN — EPA/ESRL - RTP
INVESTIGATOR.: WP HUNNEK — TENN TECH UNIV — SCH OF ENG/CIV ENG
RH MUSTAMANTE — TENN TECH UNIV — SCH OF ENG/CIV ENG
JT SCANDINA — TENN TECH UNIV — SCH OF ENG/CIV ENG

MILESTONES...: 12/80 -FINAL REPORT
PLAN ID.....: (AP-712H)(DU-A130) CHAR. AND MEASUREMENT METHODS DEVELOPMENT (AIR)
MANDATE.....: 10-02 CLEAN AIR ACT
ORDIS CODES..: NECN-002078 SSIE-ZZ 150 EPA -R806255-01 TASK-G712H-HA-03
ORD -RG10C30-1078 MAND-10-02 AP -712H
DU -A130 LABT-ALN

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE PURPOSE OF THIS RESEARCH IS TO DEMONSTRATE THE FEASIBILITY OF ACHIEVING QUANTITATIVE SEPARATION AND/OR BENEFICIATION OF ASBESTOS FROM ENVIRONMENTAL SAMPLES THUS MAKING POSSIBLE BULK ANALYTICAL TECHNIQUES (IE X-RAY DIFFRACTION WITH FIBER ALIGNMENT) FOR ASBESTOS CONCENTRATION MEASUREMENT. THE TECHNIQUE OF DENSITY GRADIENT ZONAL CENTRIFUGATION WILL BE UTILIZED FOR THE SEPARATION OF ASBESTOS FROM ENVIRONMENTAL MEDIA AND FROM OTHER SELECTED SAMPLES CONTAINING ASBESTOS AS EITHER A NATURALLY OCCURRING COMPONENT OR ADDED TO A COMMERICAL PRODUCT. THE RESEARCH WILL CONCENTRATE ON (1) TECHNIQUES FOR DISAGGREGATION OF ASBESTOS AND ASSOCIATED MATERIALS AND (2) SEPARATION OF ASBESTOS FROM ENVIRONMENTAL SAMPLES. THE OBJECTIVE OF THIS RESEARCH IS TO OBTAIN THE SEPARATION NEEDED TO ELIMINATE SERIOUS INTERFERENCE WITH FIBER ALIGNMENT AND X-RAY DIFFRACTION DETERMINATIONS.

**PROJECT: 00794-REMOVAL OF TRACE ORGANIC COMPOUNDS BY BIOLOGICALLY ACTIVATED CARBON

STARTING/ COMPLETION DATE : 09/78 - 08/81 : FUNDING : ESTIMATED - FY78 / $ 300000
TASK CODE=C614A-084 **EPA=R806256-01 ** (GRANT) PRIOR FY /

EPA OFFICER,: JK CARSWELL EPA/MERL - CINC
INVESTIGATOR,: CF GUARINO PHILA, WATER DEPARTMENT
JV RADZIUL PHILA, WATER DEPARTMENT
PR CAIRO PHILA, WATER DEPARTMENT
IM SUFFET DREXEL UNIV
MILESTONES...: 12/81 -FINAL PROJECT REPORT
PLAN ID.....: (AP-614A)(DU-C110) WATER SUPPLY - WATER TREATMENT & SYSTEMS
MANDATE.....: 30-99 NEERING, CHEMISTRY, MICROBIOLOGY 0017
ORDIS CODES..: RECN-000794 SSIE-ZZ 386 EPA -R806256-01 TASK-C614A-084
ORD -RC10C30-3078 MAND-30-99 AP -614A
DU -C110 LABT-ALM

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: NATIONAL CONCERN IS FOCUSED ON THE PRESENCE OF TRACE ORGANIC CHEMICALS IN SURFACE WATER SUPPLIES AND THEIR POTENTIAL HEALTH IMPACTS ON PUBLIC DRINKING WATER. THE ENVIRONMENTAL PROTECTION AGENCY HAS DETERMINED THAT GRANULAR ACTIVATED CARBON (GAC) IS THE BEST AVAILABLE TREATMENT TECHNOLOGY TO DATE FOR TREATING WATER TO REMOVE A "BROAD SPECTRUM" OF ORGANIC CONTAMINANTS. ACTIVE LIFE OF GAC, HOWEVER, IS SOMEWHAT LIMITED AND THE NEED FOR FREQUENT REGENERATION WITH THE ASSOCIATED LOSS OF CARBON IS ONE OF THE SIGNIFICANT COST BURDENS OF THE PROCESS. FOR THIS REASON ALTERNATIVE METHODS OF ORGANIC REMOVAL ARE CURRENTLY UNDER INVESTIGATION. THIS PROPOSAL RESEARCHES A PROMISING TREATMENT PROCESS WHICH COMBINES OXIDATION OF MACROMOLECULES OF ORGANICS BY OZONATION FOLLOWED BY ADSORPTION AND DECOMPOSITION OF THESE ORGANICS BY BIOLOGICALLY ENHANCED GRANULAR ACTIVATED CARBON. THE COMBINED PROCESS CALLED BIOLOGICALLY ACTIVATED CARBON (BAC) HAS SHOWN PROMISE IN EUROPEAN PLANTS WHEN EVALUATED BY SURROGATE ORGANIC MEASUREMENTS. THE PROPOSED RESEARCH CONSISTS OF BENCH SCALE AND PILOT SCALE STUDIES TO DEMONSTRATE THE EFFECTIVENESS OF BAC IN REMOVING TRACE ORGANICS OF HEALTH CONCERN IN THE UNITED STATES. AN ECONOMIC ANALYSIS WILL BE CONDUCTED TO EVALUATE THE COST EFFECTIVENESS OF BAC AS COMPARED TO CONVENTIONAL GAC TREATMENT.

**PROJECT: 01848-SCAVENGING OF GASES AND AEROSOL PARTICLES BY CLOUDS AND PRECIPITATION IN THE ATMOSPHERE

STARTING/ COMPLETION DATE : 07/78 - 07/81 : FUNDING : ESTIMATED - FY78 / $ 60667
TASK CODE=G603A-AE-28 **EPA=R806257-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: H VIEBROCK EPA/ESRL - RTP
INVESTIGATOR.: HR PRUPPACHER UNIV OF CALIFORNIA
P WANG UNIV OF CALIFORNIA
PLAN ID.....: (AP=603A)(DU=A125) ATMOSPHERIC PROCESSES AND EFFECTS
MANDATE.....: 10-02 CLEAN AIR ACT
ORDIS CODES..: RECN-001848 SSIE-GMA 5176 EPA -R806257-01 TASK-G603A-AE-28
ORD -RG10H30-1078 MAND-10-02 AP -603A
DU -A125 LABT-ALR

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: IN THIS STUDY WE PROPOSE TO INVESTIGATE THE EFFICIENCY WITH WHICH AEROSOL PARTICLES AND ATMOSPHERIC TRACE GASES ARE REMOVED FROM THE ATMOSPHERE BY NATURAL CLOUDS AND PRECIPITATION. FOR THIS PURPOSE SOME NEW THEORETICAL MODELS WILL BE DEVELOPED, AND SOME MODELS FORMULATED BY US IN THE RECENT PAST EXTENDED. ACCURATE FLOW FIELDS, OBTAINED BY US OVER THE LAST EIGHT YEARS, DESCRIBING VISCOUS FLOW PAST DROPS AND ICE PARTICLES OF DIFFERENT SHAPES FALLING IN AIR, WILL SERVE AS AN IMPORTANT INPUT TO OUR GAS AND AEROSOL PARTICLE COLLECTION MODELS. THE RESULTS DERIVED FROM THESE MODELS WILL BE VERIFIED BY LABORATORY EXPERIMENTS WHICH WILL BE CARRIED OUT IN THE UCLA VERTICAL WIND TUNNEL, A WALK-IN COLD CHAMBER, AND THE 35-METER-HIGH UCLA RAINSHAFT, ALL THREE LOCATED IN OUR CLOUD PHYSICS LABORATORY. THE PROPOSED STUDY HAS AS OBJECTIVE TO IMPROVE OUR UNDERSTANDING OF NATURAL CLOUDS AS SINKS FOR ATMOSPHERIC POLLUTANTS IN ORDER TO MAKE A MORE QUANTITATIVE ASSESSMENT OF THE LIFE CYCLE AND ACCUMULATION OF POLLUTANTS IN THE ATMOSPHERE.

**PROJECT: 00324-ENVIRONMENTAL EFFECTS OF IN SITU GASIFICATION OF TEXAS LIGNITE

STARTING/ COMPLETION DATE : 08/78 - 08/79 : FUNDING : ESTIMATED - FY78 / $ 53000
TASK CODE=B623A-848 **EPA=R806261-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: HC THURNAU EPA/IERL - CINC
INVESTIGATOR.: IF EDGAR UNIV OF TEXAS SCH OF ENG/CHEM ENG
MJ HUMENICK UNIV OF TEXAS SCH OF ENG/CHEM ENG
WR KAISER UNIV OF TEXAS SCH OF ENG/CHEM ENG
MILESTONES...: 08/79 -FINAL REPORT ON TEXAS LIGNITE GASIFICATION
PLAN ID.....: (AP=623A)(DU=N105) FUEL PROCESSING
MANDATE.....: 10-99 -NUCLEAR ENERGY) PL 93-577 0008
ORDIS CODES..: RECN-000324 SSIE-ZZ 439 EPA -R806261-01 TASK-B623A-848
ORD -RB10C30-1078 MAND-10-99 AP -623A
DU -N105 LABT-EMI

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE POSSIBLE ENVIRONMENTAL EFFECTS RESULTING FROM IN SITU GASIFICATION OF TEXAS LIGNITE ARE TO BE EVALUATED. THE LOCATION, QUALITY, AND QUANTITY OF LIGNITES IN TEXAS WHICH MIGHT BE SUITABLE FOR UNDERGROUND GASIFICATION WILL BE IDENTIFIED. THE APPLICATION OF VARIOUS GASIFICATION APPROACHES WILL BE EVALUATED. ADVERSE ENVIRONMENTAL IMPACTS (AIR, WATER, LAND) WILL BE QUANTIFIED AND MODELS FOR TIME AND SPATIAL VARIATION IN POLLUTANT LEVELS WILL BE ASSESSED. FINALLY THE FEASIBILITY OF SITE RESTORATION WILL BE ANALYZED WITH RESPECT TO ESTABLISHED METHODS OF POLLUTION CONTROL.

**PROJECT: 01688-INTERPRETATION OF RAPS ATMOSPHERIC ELEMENTAL CONCENTRATION DATA

STARTING/ COMPLETION DATE : 09/78 - 09/81 : FUNDING : ESTIMATED - FY78 / $ 57739
TASK CODE=G603A-AA-136 **EPA=R806263-01 ** (GRANT) PRIOR FY /

EPA OFFICER,: * COURTNEY EPA/ESRL - RTP
INVESTIGATOR,: GE GORDON UNIV OF MARYLAND SCH OF AGRIC
PLAN ID.....: (AP-603A)(OU-A125) ATMOSPHERIC PROCESSES AND EFFECTS
MANDATE.....: 10-02 CLEAN AIR ACT
ORDIS CODES..: RECN-001688 SSIE-GMA 5170 EPA -R806263-01 TASK-G603A-AA-136
ORD -RG10830-1078 MAND-10-02 AP -603A
OU -A125 LABT-ALM

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: IN PREVIOUS STUDIES, WORKERS AT THE UNIVERSITY OF MARYLAND HAVE MEASURED CONCENTRATIONS OF ABOUT THIRTY ELEMENTS ATTACHED TO PARTICLES RELEASED FROM MAJOR AIR POLLUTION SOURCES. THEY ALSO DEVELOPED METHODS FOR RESOLVING THE OBSERVED CONCENTRATION PATTERNS OF URBAN AEROSOLS INTO CONTRIBUTIONS FROM THOSE SOURCES. THOSE METHODS ARE CHEMICAL ELEMENT BALANCES AND FACTOR ANALYSIS. IN PREVIOUS EPA-SUPPORTED STUDIES BY OTHER WORKERS, ABOUT 34,000 SIZE-SEGREGATED AIR FILTER SAMPLES WERE COLLECTED OVER A TWO-YEAR PERIOD IN AND NEAR ST. LOUIS, MO, AS PART OF THE REGIONAL AIR POLLUTION STUDY (RAPS). THOSE SAMPLES WERE ANALYZED FOR ABOUT 25 ELEMENTS BY X-RAY FLUORESCENCE (XRF). IN THIS PROJECT, THE MARYLAND GROUP IS APPLYING CHEMICAL ELEMENT BALANCES AND FACTOR ANALYSES TO RESOLVE THE ST. LOUIS DATA INTO CONTRIBUTIONS FROM VARIOUS MAJOR SOURCES. THIS STUDY ALSO INCORPORATES OTHER TYPES OF RAPS DATA, INCLUDING METEOROLOGICAL DATA, SOURCE-EMISSIONS INVENTORIES AND MEASUREMENTS OF POLLUTANT GASES, TO PROVIDE A COMPREHENSIVE INTERPRETATION OF THE ST. LOUIS DATA SET. SINCE XRF ANALYSES MISS SOME ELEMENTS THAT ARE IMPORTANT FOR THE INTERPRETATIONS, SELECTED SAMPLES ARE BEING ANALYZED FOR ADDITIONAL ELEMENTS.

**PROJECT: 03478-DEVELOPMENT OF A PROTOCOL FOR TESTING EFFECTS OF TOXIC SUBSTANCES ON PLANTS

STARTING/ COMPLETION DATE : 08/78 - 08/79 : FUNDING : ESTIMATED - FY78 / $ 39976
TASK CODE=M602A-228 **EPA=R806270-01 ** (GRANT) PRIOR FY /

EPA OFFICER,: DT TINGEY EPA/ERL - CORVALLIS
INVESTIGATOR,: CR THOMPSON UNIV OF CALIFORNIA RIVERSIDE CAMPUS
MILESTONES...: 08/79 -FINAL REPORT
PLAN ID.....: (AP-602A)(OU-A105) AIR POLLUTANT EFFECTS UPON TERRESTRIAL ECOSYSTEMS
FINAL OUTPUT,: REPORT TO ASSIST IN PREPARING TOTAL PROTOCOL FOR 0041
ASSESSING PHYTOTOXICITY. 0041
MANDATE.....: 20-30 AA FOR TOXIC SUBSTANCES
ORDIS CODES..: RECN-003478 SSIE-ZZ 273 EPA -R806270-01 TASK-M602A-228
ORD -RM10C30-2078 MAND-20-30 AP -602A
OU -A105 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVE: DEVELOP A PROTOCOL FOR ASSESSING THE POTENTIAL PHYTOTOXICITY OF VARIOUS CHEMICALS ON PLANTS BY MEASURING STRESS ETHYLENE EVOLUTION. THIS PROJECT WILL FOCUS SPECIFICALLY ON THE APPLICATION OF MEASURED DOSES OF WATER SOLUBLE COMPOUNDS ON THE FOLIAGE. FINAL OUTPUT: REPORT THAT WILL ASSIST US IN PREPARING A TOTAL PROTOCOL FOR ASSESSING PHYTOTOXICITY.

**PROJECT: 01968-AEROSOL CARBON TRENDS ACROSS THE UNITED STATES

STARTING/ COMPLETION DATE : 09/78 - 09/81 : FUNDING : ESTIMATED - FY78 / $ 40000
TASK CODE=G6258-EA-77 **EPA=R806274-01 ** (GRANT) PRIOR FY /

EPA OFFICER,: RK PATTERSON EPA/ESRL - RTP
INVESTIGATOR,: JJ RUNTZICKER OREGON GRADUATE CTR DEPT OF ENV TECH
RL JOHNSON OREGON GRADUATE CTR DEPT OF ENV TECH
MILESTONES,..: 09/79 -REPORT ON CARBON ACROSS THE UNITED STATES IN 1976 (DATA BASE)
09/80 -DELIVERY OF AN AUTOMATED CARBON ANALYZER
09/81 -REPORT ON CARBON TRENDS IN THE UNITED STATES
PLAN ID.....: (AP-625R)(DU-N140) TRANSPORT AND FATE OF ENERGY-RELATED POLL. IN ECOSYSTEMS
MANDATE.....: 20-62 DAA FOR ENERGY ,MINERALS, AND INDUSTRY
ORDIS CODES..: RECN-001968 SSIE-ZZ 152 EPA -R806274-01 TASK-G6258-EA-77
ORD -RG10C30-2078 MAND-20-62 AP -6258
DU -N140 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: A THREE YEAR PROJECT IS PROPOSED TO STUDY THE TRENDS IN AEROSOL CARBON CONCENTRATIONS ACROSS THE UNITED STATES. IN THE FIRST YEAR OF THE PROJECT APPROXIMATELY 2000 HIGH VOLUME FILTERS FROM THE NATIONAL AIR SURVEILLANCE NETWORKS (NASN) 1976 ARCHIVE WILL BE ANALYZED FOR ORGANIC, ELEMENTAL, AND CARBONATE CARBON WITH AN INSTRUMENT DEVELOPED AT THE OREGON GRADUATE CENTER. AN URBAN AND NON-URBAN SITE WILL BE CHOSEN FOR 35 OF THE 50 STATES AND ALL FILTERS FROM THOSE STATIONS FOR 1976 ANALYZED. IN THE SECOND AND THIRD YEARS THE HISTORICAL TRENDS OF ORGANIC, ELEMENTAL, AND CARBONATE CARBON FOR A SMALLER NUMBER OF SITES WILL BE DETERMINED BY ANALYZING FILTERS FROM THE NASN ARCHIVES. MOST SITES HAVE FILTERS DATING BACK TO 1957, BUT A FEW SITES HAVE FILTERS BACK TO 1949. THE DATA WHICH WILL CONSTITUTE A UNIQUE DATA BASE FOR AEROSOL CARBON, WILL BE STATISTICALLY EXAMINED TO DETERMINE THE IMPACT ON CARBON CONCENTRATIONS OF SUCH EXTERNAL FACTORS AS CONTROL STRATEGY, FUEL USE, POPULATION, AND TRANSPORTATION PATTERNS. IN ADDITION, AN AUTOMATED CARBON ANALYZER OF THE TYPE USED IN THIS STUDY WILL BE CONSTRUCTED, TESTED, AND DELI

**PROJECT: 00385-LEACHING CHARACTERISTICS OF RAW SURFACE STORED OIL SHALE

STARTING/ COMPLETION DATE : 10/78 - 03/80 : FUNDING : ESTIMATED - FY78 / $ 39000
TASK CODE=B6238-845 **EPA=R806278-01 ** (GRANT) PRIOR FY /

EPA OFFICER,: ER BATES EPA/IERL - CINC
INVESTIGATOR,: DR MCWHORTER COLORADO STATE UNIV AGRIC ENG DEPT
SK SKOGERBOE COLORADO STATE UNIV AGRIC ENG DEPT
MILESTONES,..: 03/80 -FINAL REPORT: LEACHING CHARACTERISTICS OF SURFACE STORED OIL SHA LE
PLAN ID.....: (AP-623R)(DU-N105) ENERGY RESOURCE EXTRACTION AND HANDLING, SOLID FOSSIL FUELS
MANDATE.....: 10-99 -NUCLEAR ENERGY) PL 93-577 0009
ORDIS CODES..: RECN-000385 SSIE-ZZ 418 EPA -R806278-01 TASK-B6238-845
ORD -RB10C30-1078 MAND-10-99 AP -6238
DU -N105 LABT-EMI

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVE OF THIS PROJECT IS TO DETERMINE THE LEACHING CHARACTERISTICS OF RAW OIL SHALE FOR THE PURPOSE OF DETERMINING POTENTIAL IMPACTS UPON WATER QUALITY OF LARGE QUANTITIES OF SURFACE-STORED RAW OIL SHALE. SUBORDINATE OBJECTIVES ARE TO ESTIMATE THE QUANTITIES OF LEACHATE WATER LIKELY TO BE AVAILABLE IN FIELD LOCATIONS AND TO COMBINE THESE DATA WITH DATA ON LEACHATE CONCENTRATIONS TO ESTIMATE POTENTIAL LOADING OF RECEIVING WATERS WITH DISSOLVED SOLIDS, TRACE ELEMENTS, AND ORGANICS. DATA WILL BE OBTAINED BY SUBJECTING 12 COLUMNS OF MINED RAW SHALE TO LEACHING TESTS UNDER A VARIETY OF FLOW RATES, CONDITIONS OF AERATION, AND COLUMN LENGTHS. CHEMICAL ANALYSES OF RAW SHALE AND EFFLUENT FOR COMMON IONS, TRACE ELEMENTS, AND ORGANICS WILL BE MADE.

**PROJECT: 01002-MUTAGENIC POTENTIAL OF URBAN WATER AND AIR SAMPLES

STARTING/ COMPLETION DATE : 10/78 - 06/81 : FUNDING : ESTIMATED - FY78 / $ 81397
TASK CODE=D601F-002 **EPA=R806279-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: RJ BULL EPA/HERL - CINC
INVESTIGATOR.: C WITMER THOMAS JEFFERSON UNIV
JJ KOCSIS THOMAS JEFFERSON UNIV
K CHEPENIK THOMAS JEFFERSON UNIV
IH SUFFET DREXEL UNIV
MILESTONES...: 10/79 -SURVEY OF COMPOUNDS WITH KNOWN ACTIVITY
06/80 -DOUBLE BLIND STUDY OF QUALITY CONTROL SAMPLES
06/81 -COMP. OF DATA ON DOW MOLECULAR WEIGHT CHLORINATED COMP.
PLAN ID.....: (AP-601F)(DU-A105) CONTRIBUTION OF ENVIRONMENTAL FACTORS TO CANCER IN HUMANS
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-001002 SSIE-GMA 5386 EPA -R806279-01 TASK-D601F-002
ORD -RD10830-1078 MAND-10-01 AP -601F
DU -A105 LAST-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE RELATIVE CAPACITIES OF NORMAL AND INDUCED TISSUES (RAT LIVER, LUNG, KIDNEY CORTEX, PLACENTA AND EMBYRO, AND HUMAN PLACENTA) TO BIOTRANSFORM SECONDARY MUTAGENS TO ACTIVE MUTAGENS (CARCINOGENS) WILL BE COMPARED USING MUTAGEN SENSITIVE BACTERIAL STRAINS DEVELOPED BY AMES, GARRO AND OTHERS. USE OF THREE REPRESENTATIVE CARCINOGENS IN THE BACTERIAL TESTER SYSTEM WILL AID IN THE CHOICE OF TISSUE FOR TESTING THE MUTAGENIC (CARCINOGENIC) CAPACITY OF ENVIRONMENTAL COMPOUNDS FOUND IN THE AIR AND WATER OF THE CITY OF PHILADELPHIA WHICH ARE SUSPECTED CARCINOGENS. THESE COMPOUNDS WILL ALSO BE TESTED AS PRIMARY MUTAGENS WITHOUT ADDITION OF TISSUE ENZYMES. COMPOUNDS BIOTRANSFORMED TO MUTAGENS BY PLACENTA OR EMBRYO WILL BE TESTED AS TERATOGENS IN RATS. THE ACTUAL INVOLVEMENT OF CYTOCHROME P-450 IN THE BIOTRANSFORMATIONS WILL BE STUDIED BY THE ADDITION TO THE TESTER SYSTEM OF COMPOUNDS WHICH INHIBIT P-450 MEDIATED REACTIONS IN VITRO (METYRAPONE, SKF-525A, CARBON MONOXIDE (IN THE DARK) AND OTHER SPECIFIC INHIBITORS OF THE SEVERAL TYPES OF MIXED FUNCTION OXIDASES. RELATIVE MUTAGENIC EFFECTS OF THE COMPOUNDS WILL BE ASSESSED BY DOSE-RESPONSE STUDIES.

**PROJECT: 03780-ASSESSMENT OF POTENTIAL HEALTH RISKS ASSOCIATED WITH ORGANIC CONTAMINANTS - FEASIBILITY
STARTING/ COMPLETION DATE : 07/78 - 12/81 : FUNDING : ESTIMATED - FY78 / $ 50000
TASK CODE=N769 -039 **EPA=R806282 ** (GRANT) PRIOR FY /

EPA OFFICER,: WR SWAIN EPA/ERL - DULUTH
INVESTIGATOR,: LM SCHUMAN UNIV OF MINNESOTA LAB MED DEPT
CP STRAUB UNIV OF MINNESOTA LAB MED DEPT
MILESTONES...: 12/81 -FEASIBILITY STUDY REPORT
PLAN ID.....: (AP-769)(DU=) * NO TEXT FOUND **
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-003780 SSIE-ZZ 256 EPA -R806282 TASK-N769 -039
ORD -RN10C30-1078 MAND-10-01 AP -769
PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE FIRST TWO YEARS OF THE STUDY WILL BE SPENT IN IDENTIFYING AND COLLECTING EXISTING INFORMATION ON LEVELS OF ORGANIC TOXIC MATERIALS IN THE TOTAL ENVIRONMENT OF THE GREAT LAKES BASIN. THESE DATA WILL BE DERIVED FROM ON-GOING MONITORING OPERATIONS IN THE BASIN, OR ELSEWHERE, OR FROM THE PUBLISHED LITERATURE. ONCE COLLECTED, THEY WILL BE EVALUATED IN TERMS OF THEIR USEFULNESS IN ASSESSING ENVIRONMENTAL EXPOSURE AND ROUTES OF INTAKE TO THE BASIN POPULATION. COINCIDENTALLY WITH THE COLLECTION OF THE ENVIRONMENTAL DATA INDICATED, INFORMATION WILL BE SOUGHT ON DIFFERENCES IN MORTALITY AND MORBIDITY OF SELECTED PUPULATION GROUPS LIVING IN THE GREAT LAKES BASIN, THOSE SHOWING DIFFERENCES FROM OVERALL PATTERNS FOR THE U.S. POPULATION OR OTHER CONTROL GROUPS WILL BE IDENTIFIED. ATTEMPTS WILL BE MADE SUBSEQUENTLY TO RELATE ENVIRONMENTAL EXPOSURE LEVELS TO THE ORGANIC SUBSTANCES OF INTEREST AND THEIR RELEVANCE IN POSSIBLE DISEASE PRODUCTION. THIS WILL CONSTITUTE THE FEASIBILITY PHASE OF THE STUDY. ONCE COMPLETED, AN ASSESSMENT WILL BE MADE OF THE KINDS OF INFORMATION NEEDED TO DETERMINE THE POTENTIAL FOR EPIDEMIOLOGICAL ASSOCIATIONS IN RELATION TO POTENTIAL ENVIRONMENTAL EXPOSURES. DURING THE 16TH MONTH OF THE PROJECT, A MORE SPECIFIC PROPOSAL WILL BE SUBMITTED OUTLINING THE WORK REQUIRED TO MAKE THIS

**PROJECT: 00801-INTERFERENCE FROM TURBID FINISHED DRINKING WATER AND HIGH STANDARD PLATE COUNTS WITH THE DETECTION OF COLIFORM BACTERIA
STARTING/ COMPLETION DATE : 09/78 - 08/80 : FUNDING : ESTIMATED - FY78 / $ 62156
TASK CODE=C614A-091 **EPA=R806287 ** (GRANT) PRIOR FY /

EPA OFFICER,: D NACK EPA/MERL - CINC
INVESTIGATOR,: RJ SEIDLER OREGON STATE UNIV SCH OF SCI/ATMOS SCI DEPT
ME HARWARD OREGON STATE UNIV SCH OF SCI/ATMOS SCI DEPT
MILESTONES...: 11/79 -INTERIM REPORT, 1ST YEAR SUMMARY
02/81 -FINAL REPORT PUBLISHED
PLAN ID.....: (AP-614A)(DU-C110) WATER SUPPLY - WATER TREATMENT & SYSTEMS
MANDATE.....: 10-13 SOLID WASTE DISPOSAL ACT
ORDIS CODES..: RECN-000801 SSIE-ZZ 390 EPA -R806287 TASK-C614A-091
ORD -RC10C30-1078 MAND-10-13 AP -614A
DU -C110 LABT-ALN
PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVE OF THIS NEW PROPOSAL IS TO DEFINE THE PHYSICAL, CHEMICAL, AND BACTERIOLOGICAL PARAMETERS CONTRIBUTING TO TURBIDITY AND HIGH NUMBERS OF STANDARD PLATE COUNT BACTERIA WHICH INTERFERE WITH THE DETECTION OF COLIFORMS IN FINISHED DRINKING WATER. THE APPROACH WILL INVOLVE: (1) AN INTERDISCIPLINARY APPROACH TO QUANTITATIVELY DEFINE THE PHYSICAL, CHEMICAL AND BACTERIOLOGICAL COMPONENTS OF DRINKING WATER WHICH EXCEEDS [illegible] NTU MONTHLY AVERAGE AND (2) VARIOUS LABORATORY EXPERIMENTS DESIGNED TO MODEL THE COLIFORM MASK[illegible] PHENOMENON. RESULTS WILL BE USED FOR MAKING SCIENTIFIC JUDGEMENTS ON THE HEALTH EFFECTS TO THE CONSUMER WHO IS SERVED TURBID FINISHED DRINKING WATER AND TO DETERMINE WHETHER EXEMPTIONS TO THE MCL FOR TURBIDITY SHOULD BE MADE.

**PROJECT: 00325-A PROPOSAL TO ASSESS METAL ION POLLUTION OF GROUNDWATER AS A CONSEQUENCE OF UNDERGROUND COAL GASIFICATION IN THE SAN JUAN BASIN
STARTING/ COMPLETION DATE : 10/78 - 10/80 : FUNDING : ESTIMATED - FY78 / $ 25000
TASK CODE=R623A-850 **EPA=R806303-01 ** (GRANT) PRIOR FY /

EPA OFFICER..: RC THURNAU EPA/IERL - CINC
INVESTIGATOR..: EA WALTERS UNIV OF NEW MEXICO CHEM DEPT
TM NIEMCZYK UNIV OF NEW MEXICO CHEM DEPT
MILESTONES...: 11/80 -FINAL REPORT RECEIVED
PLAN ID.....: (AP-623A)(DU-N105) FUEL PROCESSING
MANDATE.....: 30-99 ISTRY & CHEMICAL ENG.
0015
ORDIS CODES..: RECN-000325 SSIE-GMA 5469 EPA -R806303-01 TASK-R623A-850
ORD -R610830-3078 MAND-30-99 AP -623A
DU -N105 LABT-EMI

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: UNDERGROUND COAL GASIFICATION (UCG) HAS RECEIVED CONSIDERABLE ATTENTION IN RECENT YEARS AS A POSSIBLE MEANS OF HARVESTING THE DEEP SEAM COAL RESOURCES BECAUSE OF ANTICIPATED ECONOMIC, HEALTH, AND ENVIRONMENTAL ADVANTAGES WHEN COMPARED TO CONVENTIONAL MINING TECHNIQUES. ONE ATTRACTIVE SITE FOR SUCH AN OPERATION IS THE SAN JUAN BASIN OF NEW MEXICO. IT HAS BEEN SHOWN ELSEWHERE THAT UCG IS TECHNOLOGICALLY FEASIBLE, BUT ONE OF THE PRIME UNCERTAINTIES IS WHAT ADVERSE EFFECTS TO THE ENVIRONMENT MAY ARISE. ONE POTENTIAL IMPACT IS CONTAMINATION OF GROUNDWATER BY METAL IONS LEACHED FROM THE ASH THAT REMAINS UNDERGROUND AFTER A UCG BURN. THIS PROPOSAL ADDRESSES THE QUESTION OF HOW SERIOUS A PROBLEM THIS MIGHT BE. WE PROPOSE HERE A STUDY OF THE POSSIBILITY OF GROUNDWATER CONTAMINATION BY SELECTED METAL IONS FOLLOWING UGC. SUBSIDENCE IS LIKELY TO ENHANCE PERMEABILITY OF THE OVERBURDEN AND PERMIT MIGRATION OF GROUNDWATER INTO THE UCG SITE WHERE IT CAN DISSOLVE METAL IONS IN THE ASH. THIS INVESTIGATION CONSISTS OF A BASELINE STUDY OF WATER, COAL, AND SOIL FROM A UCG TEST SITE FOR METAL ION LEVELS AND LEACHABILITY. THIS WILL BE FOLLOWED BY AN EXTENSIVE LABORATORY PROGRAM TO DETERMINE RATES OF SOLUTION, DISTRIBUTION COEFFICIENTS, AND EXTENT OF ION EXCHANGE AND ADSORPTION OF A NUMBER OF METAL IONS. THESE RESULTS WILL PERMIT EVENTUAL DEVELOPMENT OF A MODEL FOR ION MIGRATION FROM A UCG

**PROJECT: 03227-FIELD TESTING, APPLICATION AND REFINEMENT OF A PLANNING MODEL FOR SELECTION OF THE BEST MANAGEMENT PRACTICE
STARTING/ COMPLETION DATE : 10/78 - 03/80 : FUNDING : ESTIMATED - FY78 / $ 165000
TASK CODE=K770C-433 **EPA=R806305 ** (GRANT) PRIOR FY /

EPA OFFICER..: LA MULKEY EPA/ERL - ATHENS
INVESTIGATOR..: DB SIMONS COLORADO STATE UNIV AGRIC ENG DEPT
RM LI COLORADO STATE UNIV AGRIC ENG DEPT
MILESTONES...: 04/80 -COMPLETION/PUBLICATION OF TESTED MODEL SYSTEM
PLAN ID.....: (AP-770C)(DU-R133) FOREST MANAGEMENT
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-003227 SSIE-ZZ 329 EPA -R806305 TASK-K770C-433
ORD -RK10C30-1078 MAND-10-01 AP -770C
DU -R133 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE PRIMARY OBJECTIVE OF THIS STUDY IS TO REFINE, SIMPLIFY, AND TEST THE GENERALIZED PLANNING MODEL BEING DEVELOPED AT COLORADO STATE UNIVERSITY FOR EVALUATING MANAGEMENT ALTERNATIVES. THE MODEL REFINEMENT WILL BE ACHIEVED BY ADDING A SNOWMELT WATER AND SEDIMENT YIELD COMPONENT AND SIMPLIFIED FOR ECONOMIC AND TIME EFFICIENT UTILIZATIONS. THE DEVELOPMENT MODEL WILL BE TESTED AND APPLIED TO SELECTED WATERSHEDS. IN ORDER TO ENHANCE THE APPLICABILITY, A METHODOLOGY FOR DETERMINING THE STOCHASTIC INPUTS WILL BE IMPLEMENTED. A WORKING DOCUMENTATION WITH BROAD, PRACTICAL AND ILLUSTRATIVE EXAMPLES OF APPLICATIONS WILL BE DEVELOPED. THE STUDY WILL DEVELOP A METHODOLOGY THAT IS USEFUL FOR SELECTING THE BEST MANAGEMENT PRACTICES CONSIDERING BOTH ENVIRONMENTAL AND RE

**PROJECT: 02877-TEST AND EVALUATE DEPLOYABLE MONITORING PACKAGES

STARTING/ COMPLETION DATE : 09/78 - 09/80 : FUNDING : ESTIMATED - FY78 / $ 70000
TASK CODE=J620A-25 **EPA=R806313-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: VM LAMBOU EPA/EMSL - LAS VEGAS
INVESTIGATOR.: CA WHITEHURST LOUISIANA STATE UNIV SCH OF ENG/ENG DEPT
MILESTONES...: 01/79 -INITIATE FIELD EFFORTS
06/79 -REVIEW RESULTS TO DATE MAKE MODIFICATIONS
03/80 -COMPLETE FIELD EFFORTS
09/80 -PUBLISH REPORT ON PROJECT RESULTS
PLAN ID.....: (AP-620A)(DU-A135) MONITORING SYSTEMS DEVELOPMENT FOR OPERATION APPLICATIONS
FINAL OUTPUT.: REPORT DOCUMENTING PROJECT ACTIVITIES AND RESULTS. 0020
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
CURR. RESULTS: GRANTEE HAS OBTAINED WATER MONITORING SYSTEMS AND E 0020
ORDIS CODES..: REGN-002877 SSIE-ZZ 672 EPA -R806313-01 TASK-J620A-25
ORD -RJ10C30-1078 MAND-10-01 AP -620A
DU -A135 LABT-MTS

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVE/APPROACH: THE PROJECT OBJECTIVE IS TO DETERMINE THE EFFECTIVENESS OF COMMERCIAL WATER MONITORING SYSTEMS IN SEVERE ENVIRONMENT, RELIABILITY, ACCURACY, FAILURE RATE AND CAUSES, SERVICE REQUIREMENTS AND OTHER PERTINENT DATA WILL BE OBTAINED THROUGH DEPLOYMENT OF INSTRUMENTS IN COASTAL ESTUARINE ENVIRONS. SOME MODIFICATIONS WILL BE ATTEMPTED TO ELIMINATE COMMON FAILURES. FINAL OUTPUT: A REPORT DOCUMENTING PROJECT ACTIVITIES AND RESULTS WILL BE PUBLISHED AND PROVIDE AN ASSESSMENT OF THE CURRENT STATE-OF-THE-ART OF MONITORING EQUIPMENT AND DETERMINE AREAS FOR FURTHER DEVELOPMENT EFFORTS. RESULTS TO DATE: PROJECT IS JUST BEGINNING, THERE HAVE BEEN NO RESULTS TO DATE. THE GRANTEE HAS OBTAINED WATER MONITORING SYSTEMS AND EQUIPMENT TO PERFORM THE WORK.

**PROJECT: 03921-NEGATIVE SCREENING FOR MARINE XENOBIOTIC CHEMICALS

STARTING/ COMPLETION DATE : 10/78 - 09/79 : FUNDING : ESTIMATED - FY78 / $ 35000
TASK CODE=0787 -02 **EPA=R806334-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: N RICHARDS EPA/ERL -GULF BREEZE
INVESTIGATOR.: RC DOUGHERTY FLORIDA STATE UNIV ARTS & SCI/CHEM DEPT
JD ROBERTS FLORIDA STATE UNIV ARTS & SCI/CHEM DEPT
MILESTONES...: 09/79 -FINAL REPORT
PLAN ID.....: (AP-787)(OU-) * NO TEXT FOUND **
MANDATE.....: 10-03 TOXIC SUBSTANCES CONTROL ACT
10-06 FEDERAL INSECTICIDE, FUNGICIDE AND RODENTICIDE AC
20-64 DAA FOR HEALTH AND ECOLOGICAL EFFECTS
ORDIS CODES..: RECN-003921 SSIF-GMA 5502 EPA -R806334-01 TASK-0787 -02
ORD -RW10830-5078 MAND-10-03 MAND-10-06
MAND-20-64 AP -787 LABT-HEE

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THIS PROJECT WILL DEVELOP CHEMICAL SCREENING METHODS FOR THE DETECTION AND MOLECULAR IDENTIFICATION OF MUTAGENIC, CARCINOGENIC, AND TERATOGENIC SUBSTANCES IN MARINE ORGANISMS. WE ALSO INVESTIGATE THE METABOLIC FATE OF TOXIC SUBSTANCES AND THE GENERATION OF PROXIMAL CARCINOGENS IN MARINE ORGANISMS. SOURCES OF XENOBIOTIC CHEMICALS IN THE NATURAL ENVIRONMENT WILL BE IDENTIFIED BY SCREENING FOR THE ORIGINS OF CONTAMINATION. THE ANALYTICAL METHODOLOGY USED IN THIS STUDY WILL BE PRIMARILY CENTERED ON NEGATIVE CHEMICAL IONIZATION (NCI) MASS SPECTROMETRY AND MASS ANALYZED ION KINETIC ENERGY SPECTROMETRY (MIKES) OF NEGATIVE ION BEAMS. EXTRACTS OF MARINE ORGANISMS THAT HAVE BEEN EXAMINED FOR MUTAGENIC ACTIVITY IN BIOLOGICAL ASSAYS WILL BE DIRECTLY EXAMINED BY BOTH NCI AND MIKES TECHNIQUES. IF IT IS NECESSARY, THESE EXTRACTS WILL BE FURTHER FRACTIONATED BY ACID-BASE AND SOLVENT PARTITION OR CHROMOTOGRAPHIC MEANS WHICH DO NOT INVOLVE ADSORPTION. IN ADDITION TO THE IDENTIFICATION OF MUTAGENIC COMPOUNDS IN MARINE ORGANISMS FROM CONTAMINATED NATURAL ENVIRONMENTS, WE WILL ATTEMPT TO IDENTIFY BOTH FALSE POSITIVES AND FALSE NEGATIVES IN THE BIOLOGICAL SCREENING PROCEDURES FOR XENOBIOTIC CHEMICALS, PARTICALLY THE AMES TEST. THE COLLECTION OF MARINE ORGANISMS AND THE BIOLOGICAL SCREENING OF THEIR EXTRACTS FOR XENOBIOTIC CHEMICALS WILL BE CONDUCTED BY THE U.S. EPA ENVIRONMENTAL RESEARCH LABORAT

**PROJECT: 03922-INVESTIGATION OF CHEMICAL MUTAGEN ACCUMULATION IN THE TISSUES OF MARINE ORGANISMS

STARTING/ COMPLETION DATE : 10/78 - 09/79 : FUNDING : ESTIMATED - FY78 / $ 36200
TASK CODE=Q787 -03 **EPA=R806339-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: N RICHARDS EPA/ERL -GULF BREEZE
INVESTIGATOR.: JR BAYLIS UNIV OF WEST FLORIDA GRADUATE SCH
MILESTONES...: 09/79 -FINAL REPORT
PLAN ID.....: (AP-787)(DU-) * NO TEXT FOUND **
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: NECN-003922 SSIE-GMA 5501 EPA -R806339-01 TASK-Q787 -03
ORD -RU10B30-1078 MAND-10-01 AP -787
PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THIS PROJECT WILL ATTEMPT TO IDENTIFY MARINE ORGANISMS WHICH ACCUMULATE DETECTABLE LEVELS OF MUTAGENIC OR PROMUTAGENIC COMPOUNDS IN THEIR TISSUES AS A RESULT OF EXPERIMENTAL OR NATURAL EXPOSURE TO POLLUTION. MARINE ORGANISMS CONSUMED BY MAN WILL BE EMPHASIZED IN THE INVESTIGATION. SUCH ORGANISMS WOULD BE USEFUL AS INDICATORS OF LOW LEVEL POLLUTION OF THE MARINE ENVIRONMENT. THE ORGANISMS TESTED WILL BE FROM EXPERIMENTALLY POLLUTED LABORATORY TANKS, FROM SELECTED NATURAL SITES BOTH POLLUTED AND UNPOLLUTED, AND FROM UNEXPOSED CONTROLS. TISSUE EXTRACTS WILL BE SCREENED FOR THE PRESENCE OF MUTAGENIC COMPOUNDS BY MEANS OF THE THE AMES TEST AND/OR THE FLUCTUATION TEST. AT THE PRESENT TIME THE PRINCIPAL INVESTIGATOR'S LABORATORY HAS CAPABILITY WITH THE 'AMES TEST' AND IS DEVELOPING CAPABILITY WITH THE FLUCTUATION TEST. EXPERIMENTAL EXPOSURE AND COLLECTION OF FERAL ORGANISMS WILL BE COORDINATED WITH INVESTIGATIONS AT THE EPA GULF BREEZE ENVIRONMENTAL LABORATORY.

**PROJECT: 02461-HEALTH EFFECTS OF THE SULFUR OXIDE/PARTICULATE COMPLEX

STARTING/ COMPLETION DATE : 10/78 - 10/81 : FUNDING : ESTIMATED - FY78 / $ 200000
TASK CODE=H601D-8390 **EPA=R806348-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: CG HAYES EPA/HERL - RTP
INVESTIGATOR.: RR DODGE UNIV OF ARIZONA DIV OF RESP SCI
JL MUYERS UNIV OF ARIZONA DIV OF RESP SCI
MD LEROWITZ UNIV OF ARIZONA DIV OF RESP SCI
B HURROWS UNIV OF ARIZONA DIV OF RESP SCI
RT FAGAN MINNEAPOLIS CITY GOVT
MILESTONES...: 10/79 -PROGRESS REPORT
10/80 -PROGRESS REPORT AND EXTENSION OF GRANT
10/81 -FINAL REPORT
PLAN ID.....: (AP-601D)(DU-A105) INDENTIFICATION OF HEALTH IMPLICATIONS OF AIR POLLUTANTS
MANDATE.....: 10-02 CLEAN AIR ACT
ORDIS CODES..: NECN-002461 SSIE-ZZ 465 EPA -R806348-01 TASK-H601D-8390
ORD -RH10C30-1078 MAND-10-02 AP -601D
DU -A105 LABT-HEE
PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVE OF THIS PROJECT IS TO MORE CLEARLY DEFINE THE RELATION BETWEEN THE SULFUR OXIDE/PARTICULATE COMPLEX AND THE RESPIRATORY HEALTH OF CHILDREN. CHILDREN BETWEEN EIGHT AND TEN YEARS OF AGE WILL BE PROSPECTIVELY FOLLOWED FOR THREE YEARS BY THE USE OF QUESTIONNAIRES AND PULMONARY FUNCTION TESTS. COMPARISONS FOR PREVALENCE OF RESPIRATORY PROBLEMS AND INCIDENCE OF ACUTE RESPIRATORY ILLNESS WILL BE MADE. THESE COMPARISONS WILL BE CORRELATED WITH THE LEVELS OF SULFUR DIOXIDE, TOTAL SUSPENDED PARTICULATE, WATER-SOLUBLE SULFATE, PARTICULATE ACIDITY AND AMMONIUM ION CONCENTRATION IN THE COMMUNITIES. THE PARTICULATE MEASUREMENTS WILL BE MADE ON PARTICLES LESS THAN 2.4 UM AND BETWEEN 2.4 AND 15 UM IN DIAMETER.

**PROJECT: 00609-EXPERIMENTAL ON-SITE SEWAGE TREATMENT AND DISPOSAL PROGRAM

STARTING/ COMPLETION DATE : 09/78 - 09/81 : FUNDING : ESTIMATED - FY78 / $ 114966
TASK CODE=C6118-077 **EPA=S806349 ** (GRANT) PRIOR FY /

EPA OFFICER,: JF KREISSL EPA/MERL - CINC
INVESTIGATOR,: MP RONAYNE STATE DEPT. OF ENV QUAL
RC PAETH STATE DEPT. OF ENV QUAL
S WILSON STATE DEPT. OF ENV QUAL
MILESTONES...: 07/79 -ANNUAL PROGRESS REPORT - I
07/80 -ANNUAL PROGRESS REPORT - II
05/81 -DRAFT FINAL REPORT
07/81 -FINAL REPORT - PERFORMANCE/COST/APPLIC. OF ALTERNATIVE ON-SITE SY $
PLAN ID.....: (AP-6118)(DU-8106) WASTEWATER TREATMENT TECHNOLOGY PROGRAMS
MANDATE.....: 30-99 NEERING & SOIL SCIENCE 0014
ORDIS CODES..: RECN-000609 SSIE-GMA 5115 EPA -S806349 TASK-C6118-077
ORD -RC10830-3078 MAND-30-99 AP -6118
DU -8106 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: A STATEWIDE EXPERIMENTAL ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS FIELD TESTING PROGRAM IS BEING CONDUCTED TO DEVELOP A TECHNICAL DATA BASE UPON WHICH FUTURE MODIFIED ON-SITE OR ALTERNATIVE INDIVIDUAL SEWAGE SYSTEMS RULES AND STANDARDS CAN BE BASED. EXPERIMENTAL SYSTEMS ARE DESIGNED TO OVERCOME ONE OR MORE COMMON, NATURALLY OCCURING, PHYSICAL LIMITATIONS RELATED TO SOILS, GROUNDWATER, RELIEF OR CLIMATE WHICH CURRENTLY PREVENT THE ISSUANCE OF A SEPTIC TANK-DRAINFIELD PERMIT. UP TO 260 EXPERIMENTAL SYSTEMS OF 14 VARIETIES WILL BE PERMITTED, CONSTRUCTED AND MONITORED DURING THE EXPERIMENTAL PROGRAM THROUGH MID 1980. DEPENDING UPON WHEN SYSTEMS ARE INSTALLED, THE FINAL REPORT WILL REFLECT MONITORING DATA RECORDED OVER 2 TO 5 YEARS. SOILS WILL BE CLASSIFIED ACCORDING TO USDA NOMENCLATURE AT EACH TEST SITE. SEVERAL PHYSICAL AND CHEMICAL SOIL PROPERTIES WILL BE ANALYZED. BOD5, SUSPENDED SOLIDS AND FECAL COLIFORM PARAMETERS WILL BE USED TO DETERMINE THE TREATMENT EFFICIENCY OF SOILS AND SOME TREATMENT SYSTEMS STUDIED. ANIONS WILL ALSO BE USED TO QUALIFY SEWAGE TREATMENT AND REMOVAL EFFICIENCIES IN SOME CASES. ANTIBIOTIC TAGGED FECAL COLIFORM ORGANISMS WILL BE USED TO INTENSIVELY MONITOR UP TO 26 SYSTEMS OF 13 DIFFERENT VARIETIES DURING STORM CYCLES. OREGON STATE UNIVERSITY HAS AND WILL CONTINUE TO CONSULT WITH THE DEPARTMENT ON SOILS ANALYSIS AND SYSTEM MONITORING APPROACH.

**PROJECT: 02876-DEVELOP AND TEST A TURBIDITY SENSOR

STARTING/ COMPLETION DATE : 09/78 - 07/80 : FUNDING : ESTIMATED - FY78 / $ 30000
TASK CODE=J620A-23 **EPA=R806351-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: RW THOMAS EPA/EMSL - LAS VEGAS
INVESTIGATOR.: R NEWTON TEXAS A & M UNIV COLL STA CAMP
MILESTONES...: 07/80 -FINAL PROJECT REPORT
PLAN ID.....: (AP=620A)(DU=A135) MONITORING SYSTEMS DEVELOPMENT FOR OPERATION APPLICATIONS
FINAL OUTPUT.: REPORT DESCRIBING SYSTEM AND PRESENTING RESULTS OF 0020
PROJECT TESTS. 0020
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-002876 SSIE-ZZ 671 EPA -R806351-01 TASK-J620A-23
ORD -RJ10C30-1078 MAND-10-01 AP -620A
DU -A135 LABT-MTS

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: OBJECTIVE/APPROACH: A RELIABLE, ACCURATE, AND STABLE SENSOR TO MEASURE TURBIDITY IS REQUIRED FOR MONITORING WATER QUALITY BY UNATTENDED SYSTEMS. A LASER TECHNIQUE APPEARS PROMISING AS A SOLUTION. INVESTIGATIONS AS TO SURFACE EFFECTS, CHARACTERIZATION OF TURBIDITY CONTRIBUTORS, AND EVALUATION OF ITS OPERATION IN A SUBMERGED MODE WILL BE MADE. FINAL OUTPUT: A REPORT DESCRIBING THE SYSTEM AND PRESENTING THE RESULTS OF THE PROJECT TESTS WILL BE PUBLISHED FOR USE BY MONITORING AGENCIES.

**PROJECT: 00538-TREATMENT OF STORMWATER RUNOFF BY A MARSH/FLOOD BASIN

STARTING/ COMPLETION DATE : 09/78 - 03/81 : FUNDING : ESTIMATED - FY78 / $ 74441
TASK CODE=C611A-073 **EPA=R806357 ** (GRANT) PRIOR FY /

EPA OFFICER..: AN TAFURI EPA/MERL - CINC
INVESTIGATOR..: RA TRANTER ASSN OF BAY AREA GOVTS
JA LAGER METCALF & EDDY ENG INC
YJ LITWIN CHICANO PINTO RES PROJ INC
MILESTONES...: 02/79 -COMPLETE LITERATURE REVIEW
08/79 -COMPLETE INITIAL CHARACTERIZATION OF STUDY AREA
03/80 -COMPLETE INFLOW & OUTFLOW DATA COLLECTION
06/80 -COMPLETE ANALYSIS OF RESULTS
07/80 -COMPLETE SURVEY OF POTENTIAL APPLICATIONS
09/80 -COMPLETE DRAFT FINAL REPORT
03/81 -COMPLETE FINAL MANUSCRIPT
PLAN ID.....: (AP-611A)(DU-R106) URBAN RUNOFF POLLUTION CONTROL
MANDATE.....: 10-01 FEDERAL WATER POLLUTION CONTROL ACT
ORDIS CODES..: RECN-000538 SSIE-ZZ 412 EPA -R806357 TASK-C611A-073
ORD -RC10C30-1078 MAND-10-01 AP -611A
DU -R106 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE PRIMARY OBJECTIVE OF THE STUDY IS TO ANALYZE THE QUALITATIVE CHANGES OF SURFACE RUNOFF WATER AS A RESULT OF PONDING IT IN THE PALO ALTO MARSH/FLOOD BASIN. A MAJOR SHARE OF THE WORK WILL BE DEVOTED TO COLLECTION AND ANALYSIS FOR THE FOLLOWING DATA: INFLOW TO THE BASIN FROM THE TRIBUTARY CREEK WATERSHEDS, OUTFLOW FROM THE BASIN THROUGH SIXTEEN TIDAL GATES LOCATED IN ONE SECTION OF ITS NORTHEASTERN CORNER, SOIL CORE SAMPLES FROM THE BASIN IN ORDER TO DETERMINE THE FATE AND COMPOSITION OF CONSTITUENTS DEPOSITED, BASED ON (1) THE COLLECTED DATA, (2) THE ANALYZED CHARACTERISTICS OF THE BASIN AND THE TRIBUTARY WATERSHED, AND (3) COST INFORMATION OF BASIN OPERATION, A COMPARISON WILL BE MADE BETWEEN USING MARSH/FLOOD BASIN AS A TREATMENT MEASURE FOR MITIGATING STORMWATER RUNOFF, OTHER BEST MANAGEMENT PRACTICES AND STRUCTURAL TECHNIQUES USED FOR THAT PURPOSE. SATELLITE IMAGERY RESOURCES WILL BE EVALUATED TO ASSESS THE POTENTIAL NATIONAL APPLICABILITY.

**PROJECT: 04026-TEXAS LIGNITE DEVELOPMENT ENVIRONMENTAL ASSESSMENT AND RESEARCH PLAN

STARTING/ COMPLETION DATE : 04/78 - 03/79 : FUNDING : ESTIMATED - FY78 / $ 160000
TASK CODE=V624C-14 **EPA=R806359-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: P SCHWENGELS EPA/HDQTRS- OEMI
INVESTIGATOR.: D WHITE STA ENERGY ADV COUN
MILESTONES...: 05/78 -PHASE I WORK PLAN
06/78 -PHASE I REPORT
06/78 -REVIEW PANEL MEETING
08/78 -PHASE II & III WORK PLAN
12/78 -PHASE II REPORT
01/79 -REVIEW PANEL MEETING
02/79 -PHASE III REPORT
03/79 -FINAL REPORT
PLAN ID.....: (AP-624C)(DU-L110) ENERGY-INTERGRATED ASSESSMENT
FINAL OUTPUT.: FINAL REPORT PRESENTING RESULTS OF RESEARCH FORMAT. 0054
MANDATE.....: 10-02 CLEAN ATR ACT
CURR. RESULTS: PRELIM. PHASE I REPORT, REVIEW PANEL MEETING, COMPL 0054
OF WORK PLAN. 0054
ORDIS CODES..: RECN-004026 SSIE-GMA 5206 EPA -R806359-01 TASK-V624C-14
ORD -RV10830-1078 MAND-10-02 AP -624C
DU -L110 LABT-EMI

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVE OF THIS PROJECT IS TO ASSESS THE PROBABLE IMPACTS OF EXPECTED FUTURE DEVELOPMENT OF TEXAS LIGNITE RESOURCES. THIS MULTI-DISCIPLINARY, POLICY-ORIENTED STUDY WILL CONSIDER POSSIBLE LIGNITE EXTRACTION AND UTILIZATON OPTIONS THROUGH THE YEAR 2000. THE RESEARCH TEAM WILL ATTEMPT TO IDENTIFY AND CHARACTERIZE THE MAJOR ENVIRONMENTAL, SOCIO-ECONOMIC, PUBLIC HEALTH AND INSTITUTIONAL IMPACTS WHICH COULD RESULT FROM THIS PROCESS AND THE POLICY ISSUES CREATED OR AGGREVATED BY THESE IMPACTS. ALTERNATIVE SOLUTIONS TO POLICY PROBLEMS WILL BE OUTLINED WITH PROBABLE CONSEQUENCES OF EACH. THE MAJOR FINAL PRODUCT OF THIS PROJECT WILL BE A FINAL REPORT PRESENTING THE RESULTS OF THE RESEARCH EFFORT IN A FORMAT WHICH WILL BE UNDERSTANDABLE AND USEFUL TO CURRENT DECISION-MAKERS. WORK TO DATE HAS INCLUDED A PRELIMINARY PHASE I REPORT, AND A REVIEW PANEL MEETING TO EVALUATE THIS REPORT AND ASSIST IN PLANNING THE REMAINDER OF THE STUDY AND THE COMPLETION OF A WORK PLAN FOR THE REMAINDER OF THE PROJECT.

**PROJECT: 03920-OXIDATION AND CONJUNCTION OF CARCINOGENIC HYDROCARBONS IN MARINE ANIMALS

STARTING/ COMPLETION DATE : 09/78 - 09/81 : FUNDING : ESTIMATED - FY78 / $ 55600
TASK CODE=0787 -01 **EPA=R806368-01 ** (GRANT) PRIOR FY /

EPA OFFICER,:	P SCHOOR	EPA/ERL -GULF BREEZE	
INVESTIGATOR,:	DR STRENGTH	AUBURN UNIV	AGRIC DEPT
	MM DARON	AUBURN UNIV	AGRIC DEPT
	JL AULL	AUBURN UNIV	AGRIC DEPT
MILESTONES...:	09/81 -FINAL REPORT		
PLAN ID.....:	(AP=787)(DU=) * NO TEXT FOUND **		
MANDATE.....:	10-03 TOXIC SUBSTANCES CONTROL ACT		
	10-06 FEDERAL INSECTICIDE, FUNGICIDE AND RODENTICIDE AC		
	20-64 OAA FOR HEALTH AND ECOLOGICAL EFFECTS		
	30-99 HEMISTRY		
ORDIS CODES,.:	REGN=003920	SSIE-GMA 5503	EPA -R806368-01 TASK=0787 -01
	ORD -RA10830-5078	MAND=10-03	MAND=10-06
	MAND=20-64	MAND=30-99	AP =787 LAB=HEE
PROJ STATUS,.:	PROJECT=ACTIVE	DATA=ORIGINAL	CATEGORY=RESEARCH

ABSTRACT.....: THE OXIDATIVE METABOLISM OF POLYCYCLIC HYDROCARBONS (PAH) RESULTS IN PRODUCTS OF HIGH CELLULAR TOXICITY OR MUTAGENECITY. THE TYPES OF COMPOUNDS THAT UNDERGO THIS OXIDATIVE METABOLISM INCLUDE: STEROIDS, DRUGS, INSECTICIDES, ANESTHETICS, AS WELL AS POLYCYCLIC HYDROCARBONS. THE PRIMARY PURPOSE OF THIS PROPOSED PROJECT IS THE STUDY OF TYPES OF OXIDATION PRODUCTS PRODUCED BY THE METABOLISM OF SELECTED FISH AND SHELLFISH AND THE EXTENT AND TYPES OF CONJUGATED PRODUCTS FORMED BY THESE SELECTED MARINE ORGANISMS. THE ENZYME SYSTEMS INVOLVED IN THE PRODUCTION AND ACTIVATION OF GLUCURONIC ACID AND SULFATE WILL BE ASCERTAINED IN TISSUES OF MARINE ORGANISMS. SINCE OXIDATION OF PAH PRODUCES MORE POLAR COMPOUNDS THAT MAY BE CONJUGATED WITH SEVERAL KNOWN COMPOUNDS, THE CONJUGATION AND CONSEQUENT INCREASE IN SOLUBILITY MAY BE A HIGHLY IMPORTANT PART OF THE PROCESS THAT PROTECTS ALL ORGANISMS FROM SHORT-TERM TOXICITY AND LONG-TERM CARCINOGENS.

**PROJECT: 01971-ATMOSPHERIC EMISSIONS AND REACTANTS FROM SHALE OIL EXTRACTION FROM COAL AND OIL SHALE FIELDS
STARTING/ COMPLETION DATE : 10/78 - 10/82 : FUNDING : ESTIMATED - FY78 / $ 125000
TASK CODE=G625H-EA-89 **EPA=R806386-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: G4 HARNES EPA/ESRL - RTP
INVESTIGATOR.: R DRAFTZ I I T RES INST
S GORDON I I T RES INST
MILESTONES...: 11/78 -OIL SHALE BASIN FIELD STUDY
09/79 -INTERIM REPORT ON FIELD STUDY
12/79 -SURFACE RETORTING SITE FIELD STUDY
12/80 -REPORT ON FIELD STUDY
11/80 -IN STTU COAL SITE FIELD STUDY
10/82 -FINAL REPORT ON THE THREE ENERGY TECHNOLOGIES
PLAN ID.....: (AP-6254)(OU-N140) TRANSPORT AND FATE OF ENERGY-RELATED POLL. IN ECOSYSTEMS 0037
FINAL OUTPUT.: JOURNAL PUBLICATIONS AND ORD FINAL REPORT
MANDATE.....: 10-02 CLEAN AIR ACT
ORDIS CODES..: RECN-001971 SSIE-ZZ 522 EPA -R806386-01 TASK-G625H-EA-89
ORD -RG10C30-1078 MAND-10-02 AP -625H
OU -N140 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE OBJECTIVES OF THE TASK IS TO DETERMINE THE COMPOSITION, TRANSPORT AND TRANSFORMATION OF EMISSIONS RESULTING FROM EXTRACTIVE PROCESSES FOR RECOVERING OIL AND GAS FROM OIL SHALE AND COAL FIELDS. THE FIRST STUDY WILL OCCUR AT AN OIL SHALE FIELD. THE APPROACH INVOLVES GROUND BASED, ELEVATED SAMPLING PLATFORM AND AIRCRAFT SAMPLING UPWIND AND DOWNWIND OF THE EMISSION SITE. INORGANIC AND ORGANIC GASEOUS AND AEROSOL POLLUTANTS WILL BE SAMPLED AND ANALYZED. THE AIRCRAFT SAMPLING WILL PROVIDE INFORMATION FOR FLUX DETERMINATIONS AND FOR TRANSPORT AND TRANSFORMATION STUDIES OF REACTING SPECIES. THE OUTPUTS FOR THIS TASK WILL BE JOURNAL PUBLICATIONS AND AN ORD FINAL REPORT DETAILING THE ENVIRONMENTAL IMPACT OF THESE NEW ENERGY TECHNOLOGIES. THE FIRST FIELD STUDY WILL OCCUR IN NOVEMBER, 1978 AT AN OIL SHALE BURN IN COLORADO.

**PROJECT: 01777-DETERMINATIO" OF THE EXCHANGE PROCESSES BETWEEN FORESTS & THE ATMOSPHERE
WITH EMPHASIS ON MICROSCALE PRESSURE FLUCTUATION MEASUREMEN
STARTING/ COMPLETION DATE : 10/78 - 09/81 : FUNDING : ESTIMATED - FY79 / $ 17676
TASK CODE=G603A-AB-40 **EPA=R806393-01 ** (GRANT) PRIOR FY /

EPA OFFICER.: J SHREFFLER EPA/ESRL - RTP
INVESTIGATOR.: KR KNOERR DUKE UNIV SCH OF FORESTRY & ENV STD
JT SIGMON DUKE UNIV SCH OF FORESTRY & ENV STD
PLAN ID.....: (AP-603A)(DU-A125) ATMOSPHERIC PROCESSES AND EFFECTS
MANDATE.....: 10-02 CLEAN AIR ACT
ORDIS CODES..: RECN-001777 SSIE-GMA 5173 EPA -R806393-01 TASK-G603A-AB-40
ORD -RG10830-1078 MAND-10-02 AP -603A
DU -A125 LABT-ALW

PROJ STATUS..: PROJECT-ACTIVE DATA-ORIGINAL CATEGORY-RESEARCH
ABSTRACT.....: THE RESEARCH PROPOSED FOR THIS STUDY WILL APPLY A TECHNIQUE FOR MEASURING MICROSCALE PRESSURE FLUCTUATIONS WITHIN AND ABOVE A FOREST CANOPY TO AID IN THE DETERMINATION OF THE EXCHANGE PROCESSES BETWEEN FORESTS AND THE ATMOSPHERE. MICROMETEOROLOGICAL MEASUREMENTS INCLUDING INSTANTANEOUS FLUCTUATIONS OF PRESSURE, VELOCITY, AND TEMPERATURE, VERTICAL PROFILES OF WINDSPEED, TEMPERATURE, AND CO2, PLUS TOTAL SOLAR AND NET RADIATION WILL BE MADE AT AN EXPERIMENTAL FOREST RESEARCH SITE USED AS THE TRIANGLE SITE FOR THE INTERNATIONAL BIOLOGICAL PROJECT OPERATED BY DUKE UNIVERSITY. THESE MEASUREMENTS WILL ENABLE US TO BETTER UNDERSTAND DISCREPANCIES IN FLUXES OVER FORESTS CALCULATED FROM THE AERODYNAMIC METHOD AND THE BOWEN RATIO METHOD. INITIAL MEASUREMENTS OF THE TURBULENT ENERGY BALANCE AND REYNOLDS STRESS EQUATION FOR THE FOREST CANOPY WILL ALSO BE MADE. THE TIME PERIOD COVERED BY THIS PROPOSAL IS THREE YEARS. THIS ALLOWS SUFFICIENT TIME FOR CALIBRATION OF THE PRESSURE, VELOCITY, AND TEMPERATURE FLUCTUATION MEASURING EQUIPMENT, PLUS TIME FOR MEASUREMENTS DURING TWO FULL GROWING SEASONS.

*** SUMMARY ***

ACTIVE PROJECTS 411
SAVED PROJECTS 411
PURGED PROJECTS

RESOURCE ESTIMATES THIS RUN
(NOTE: SUMMARY VALUES ARE APPROXIMATE ESTIMATES
OF PROJECT RESOURCES)

IN-HOUSE	NO.=	,	PY=	, $=	
GRANTS	NO.=	411,	PY=	, $=	47302866
CONTRACT	NO.=	,	PY=	, $=	
I.A.G.	NO.=	,	PY=	, $=	

*U.S. GOVERNMENT PRINTING OFFICE: 1979 311-132/169 1-3